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BORZOI JOURNALISM HANDBOOKS

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COMPOSING ROOM OF A LARGE DAILY PAPER

BORZOI HANDBOOKS OF JOURNALISM
EDITED BY NELSON ANTRIM CRAWFORD

PRINTING FOR THE JOURNALIST

A HANDBOOK FOR REPORTERS, EDITORS, AND STUDENTS OF JOURNALISM

By

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Dean of the School of Journalism
University of Oregon

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Preface

This book is dedicated to that large class of newspaper workers who have acquired some knowledge of printing slowly and under difficulties, and found it useful. The author hopes that it will make the way easier for such men in the future: the younger group who are now "learning the ropes" as reporters on newspapers or as students in schools of journalism. There was a time when most journalists had, like Horace Greeley, the advantage of an apprenticeship at the case, but that day has passed. Yet the profession of journalism is just as completely dependent upon the art of printing as it ever was; the liaison man who can speak the tongue and think the thoughts of both the editorial and the mechanical departments is imperatively necessary in every office, and he alone is fit to become an editor-owner.

The young printer who would learn journalism is at a disadvantage in these days of prolonged college training for reporters; the young journalist who would learn printing is at an equal disadvantage when confronted with a five-year apprenticeship rule. We may well bespeak the indulgence

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of all concerned for the young men who are trying to bridge the gap; in the present instance we are emphasizing the point that no useful knowledge of printing can be acquired elsewhere than in the shop itself. This book will be scarcely intelligible, and not at all useful, to one who has not at least some slight opportunity of access to a printing establishment. But for the young man placed reasonably close to the smell of printers' ink it is hoped that it will serve as a guide to self-training.

The practical printer often deprecates the young scribe's desire to know anything at all about the mechanical art from which they both draw their sustenance; yet the young reporter, if in his later years he becomes an editor or owner, will find ignorance of printing a serious handicap, and no one will be quicker to recognize his lack than his printer employees. The present writer has kept in mind throughout the young man, educated academically, who is beginning his professional career as a newspaper reporter. Such a beginning leads to many and various types of success in life; the one that this book hopes for him is that he will some day become the editor and owner of a newspaper, —possibly, indeed probably, one much smaller than the one on which he begins. In such a position the modicum of printing knowledge here contained will not prove too much, though it may be rather an oversupply for the metropolitan reporter. The intention was to include in this volume some chapters carrying the young man on through his managing editorship and taking up the technical problems that will confront him when as owner he undertakes the management of a small newspaper and the accompanying commercial printing department which is so often inseparable from the newspaper when the investment must be small; but these chapters grew beyond their intended proportions and will have to be reserved for a sequel.

Nevertheless, the central idea remains: it is better to be first in the village than to be second in Rome. In the newspaper world especially, the smaller paper offers a possibility of peace, security and influence in old age which the reporter can scarcely look forward to in connection with the highly commercialized journalistic machines of the larger cities. In this volume a definite effort has been made to retain throughout the point of view of the smaller paper: the daily with a circulation of less than 10,000 and the weekly paper of 1,500 to 5,000. To become master of such an organization some knowledge of printing is necessary.

Grateful acknowledgment is made of the help received from both newspaper men and printers who have looked over the copy for this book and offered valuable criticisms and suggestions. Mr. Paul Kelty, editor of the Eugene *Guard*, a newspaper man who himself most successfully made the transition from a metropolitan desk to the ownership of a smaller daily; Mr. David Foulkes, mechanical superintendent of the Portland *Oregonian,* who for almost a generation has been responsible for the technical excellence of that admirably printed newspaper; Mr. Elbert Bede, of the Cottage Grove *Sentinel,* who grew up at the case and who has succeeded in producing a rural paper of unusual quality; and Mr. Robert C. Hall, Superintendent of the University Press and Professor of Printing in the University of Oregon School of Journalism, have been most helpful. To various printers in the office of the San Francisco *Chronicle* and Oregon *Journal,* of Portland, acknowledgments are also extended. Mr. John Henry Nash, of San Francisco, typographer and publisher of many fine volumes, was kind enough to read the historical portion.

ERIC W. ALLEN.

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The Reporter

I

The Fundamental Processes

The Reporter's Contact with Printing. Save on the very smallest papers, the reporter at the beginning of his career comes only very gradually to feel the need of understanding the technique of printing. Between him and the mechanical problems of the back shop are stationed experienced copy-readers, a city editor, make-up editors, and a managing editor, who guide his work and alter his copy in such ways as will solve for him most of the problems that stand between him and the proper typographical presentation of his news or feature material. His duty, in this stage of apprenticeship, is merely to write a straight tale, under instructions from the city editor as to its length and manner of treatment, and to leave to others all questions as to size of type, handling of quoted passages, width of measure, typographic emphasis, borders and boxes, subheads, heads, and the placing of the article (or "story") in its proper place on the chosen page. However, a reporter who elects to remain in this state of ignorance of printing processes is not likely to become either a first-rate reporter or a promising candidate for promotion to an executive position.

Use of Printing Knowledge by the Reporter. A newspaper's success depends upon its ability to produce material that is attractive to the reader, that catches the eye, that satisfies the human craving for vivacity, that is presented with a nicely modulated emphasis by which the most important and interesting phases of the news are brought adroitly into contrast with the more routine material surrounding them. While many of these effects depend upon the incisiveness of the reporter's news-gathering, and upon his control of a suitable literary style, correct typographic presentation is a large factor in newspaper effectiveness, and even from the beginning it would be a mistake for an ambitious reporter to neglect its study. If the reporter knows something of printing technique, devices will often occur to him, while his mind is heated with his story, which the man at the copy desk would not think of himself, but which he will willingly adopt when suggested by the reporter—provided they are, in the circumstances, practicable. Only a mind informed in the technique of printing processes will prove fertile in reasonable suggestions, or able to pass upon their practicability.

EFFECT UPON PROMOTION. Promotion to executive positions in a newspaper office is almost always based, at least in part, upon "experience." The chance for experience in executive work comes to the reporter suddenly. Some illness or resignation in the executive staff, the vacation period, or, on a seven-day paper, the ordinary working of the "day-off" schedule, calls for a sudden rearrangement of the staff. This may be temporary, but it may prove permanent. At any rate, it is a chance for the reporter to gain a variety of experience, and the opportunity always goes to the man who in his ordinary work has shown some understanding of the technical problems that confront the executive or copy-reader whose place he may be called upon to fill. Furthermore, if the reporter hopes in his later years to become a managing editor or the owner of his own paper, he must realize that he is looking forward to a way of life in which his success will depend in no small degree upon the reasonableness of the orders he imposes upon the mechanical department. He will also have to make important technical decisions when new equipment is to be purchased. It should be his pleasure as well as his duty to improve the excellent opportunity he has to study the problems of the job ahead.

THE REPORTER'S INITIATION. The first of his own work that the reporter sees in print usually comes to his eye with the shock of surprise. It is not what he wrote. The article is of quite a different length—usually shorter; the facts have been rearranged; the somewhat long and correctly constructed paragraphs he produced have been chopped without apparent reason into shorter ones in a way that seems almost to violate the rules of rhetoric as he learned them. His introductory lines have been eliminated, his climax has been spoiled by being advanced to the initial position formerly occupied by his introduction, and the phrases he desired to have set in italics for emphasis are in ordinary, commonplace roman. He realizes, if he is observant, that the "story" is now more closely in accord with the form which the city editor tried to instruct him to follow and which he failed fully to understand. He realizes, too, that he cannot succeed as a reporter if all his work must be done over after him by the expenditure of the valuable time of other men. He has two alternatives: the first is to learn by rote all the so-called "rules" of news-writing; the other, and far more useful, is to study the reasons for these "rules." The reasons are largely typographic, and involve a knowledge of printing processes.

How to Begin the Study. It is assumed that the reporter knows that simple printing consists in arranging types in the correct order, inking their faces, and bringing paper and type together under pressure. Most boys have experimented with these operations on miniature presses. Once the young man has secured a position as a reporter, opportunities to extend this knowledge are not lacking. On all but the largest newspapers the young men of the editorial staff have from the start occasional chances to visit the mechanical departments. Even on the large papers, where reporters are sometimes excluded from the composing room, the first promotion to a "desk" position often brings with it not only the privilege but the duty of making frequent visits to the manufacturing portion of the establishment. At the worst, it is easy to gain friendly access to some nearby commercial shop if one's own plant is closed. The commercial plant is sufficiently like the newspaper plant to furnish a good laboratory. At first the inexperienced eye sees in the printing department only a whirring maze of equipment and busy operatives, evidently purposeful, but for the present mysterious—an environment in which the young reporter could not possibly, without study, act effectively in an executive position. His first visit is his first opportunity to begin his preparation for promotion to managerial positions on the newspaper. Let the first step be to resolve the maze of the mechanical department clearly into its component parts.

Divisions of the Shop. The processes involved in the production of the printed page are essentially three:

1. Composition, the process of putting type letters or their equivalent properly together to form readable lines.

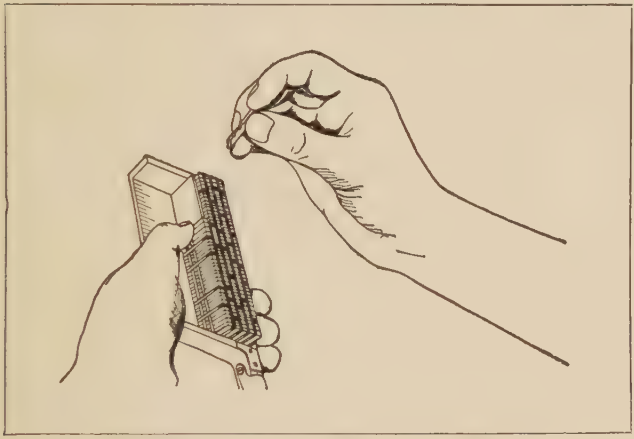
2. Make-up, the process of putting these lines and other material together to form pages.

3. Press work, the process of inking these type pages and bringing the inked surface and the paper together under pressure.

If the beginner will keep these main divisions in mind, the apparent confusion will begin to clear up. There are certain adjunct processes that will readily fall into place in connection with this outline, such as the department in which the printed pages are folded, bundled, and prepared for delivery; and the various departments in which material for illustrations is made.

In a small shop all of the processes frequently take place in one large room; nevertheless, the appropriate parts of this space are known as the "composing room," the "make-up floor," and the "press room."

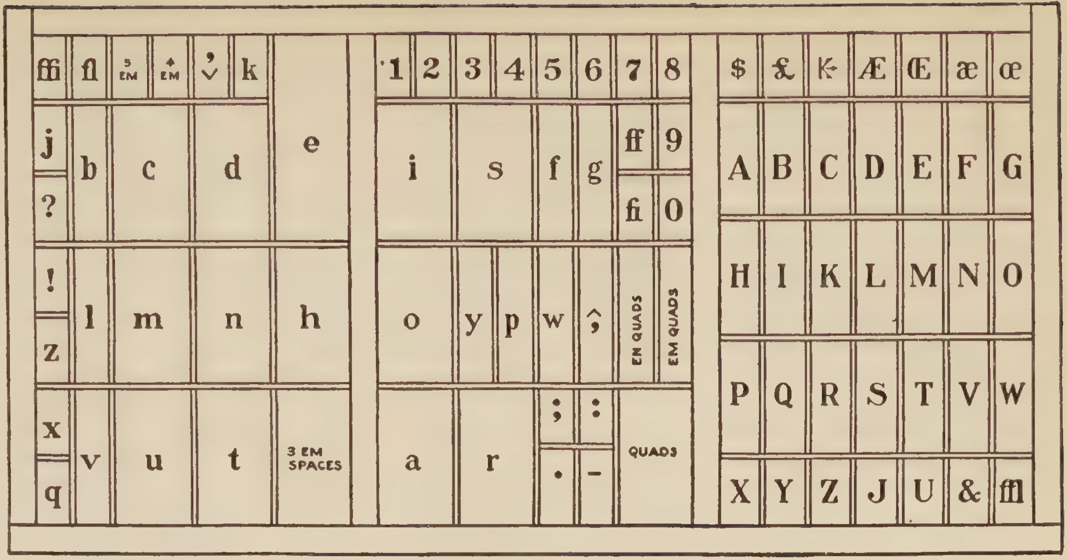
Composing Room. In most modern shops the composing room is in turn divided into two departments: the hand composition department (in newspaper shops frequently called the "ad alley" because there the principal function is the setting of advertisements), and the machine composition department. In the hand composition department the printers stand before "cases," conveniently arranged on "racks" or in "cabinets." The case is a shallow tray divided into numerous compartments or "boxes," each box containing many types of a single letter, or of a single "point" (punctuation mark). The printer (called "compositor" when engaged in composing) holds a narrow metal tray ("composing stick") in his left hand and picks up the types, one at a time, in their right order and arranges them into readable lines in the stick, with appropriate spaces between the



Placing Type in the Composing Stick

words. He is careful to make all lines of exactly the same length, "justifying" them until they fit snugly into the stick. Each time his stick is filled (it takes about two inches of type to fill a stick) he carefully empties the stick into the "galley," a much longer tray. The galley is two feet long and usually holds about twenty inches of type; it therefore takes about ten sticks of type to fill a galley. Both "stick" and "galley" are terms commonly used on the editorial side as well as in the shop; they are measures of length, a stick meaning an article about two inches long; "galley" being a synonym for a newspaper column. When the galley is filled it passes on to the proof press, and after any necessary corrections are made it goes to the make-up floor to be made up into the page.

Hand Composition. It is interesting to watch the hand compositor at his work; his is a skilled task that has been handed down from journeyman to apprentice for centuries. In the shop of the present day the observer is likely to find that the hand compositor is setting an advertisement or a headline in comparatively large type, but until thirty or forty years ago his most usual task was the setting of straight matter. "Straight matter" is the ordinary reading matter that constitutes the body of the articles as distinguished from titles and "display." It is now usually set on the composing machines. When the hand compositor sets



The Lay of the Case

straight matter he has before him two cases on the top of the rack. The one nearest to him rests at a slight slope and is called the "lower case." The other, just beyond and above the lower case, is at a steeper slope and is called the "upper case." As the former contains the small letters and the latter, among other things, the capitals, these terms, especially lower case (or "l.c."), have become the ordinary printers' synonyms for small letters and capitals. Today the printer is likely to be using, instead of his set of two cases, a single "job case" in which the capitals are included in boxes at the right of the case. Printers do not have to look at the "face" (the lettered end) of the type to identify it; they know what letter it is from the location of its box in the case. Since they do not look at the face there must be some way to avoid getting the letter into the line upside down; this is accomplished by the presence of one or more "nicks" or notches on one side—the side that is to be nearest to the bottom of the column. The nick shows which is the "bottom" of the type. When a line is nearly complete, it is usually apparent that the last word set does not quite fill the line, and that the next word or syllable in the copy is too long to go in. The compositor then "justifies" the line by inserting enough extra spaces between the words to make it fit snugly into the stick. To facilitate his work the compositor inserts, between the last completed line in the stick and the line he is to work on, a "composing rule," a strip of hard, smooth metal, against which the types will easily slide into place. As soon as the new line is justified he lifts the composing rule from under it and puts it on top to serve as foundation for the next line. The purpose of the rule is to give him a smooth, hard surface against which to place his type. It is possible to compose without a composing rule, but the nicks in the line beneath and the top of the lead in leaded matter are likely to catch the feet of the type going into the line above, thus causing some slight trouble and delay.

MACHINE COMPOSING ROOM. Under modern conditions, as stated, the hand composition department in shops devoted largely to newspaper publishing does not set a great deal of straight matter. The straight matter is set on composing machines. The machine composing room will contain anything from one machine to a "battery" of perhaps a hundred of these machines, called, according to the kind used, linotypes, intertypes, or monotypes. The linotype or intertype is the usual newspaper equipment for the setting of straight matter. These machines are so much alike that except for minor details a description of one will answer for the other. They are sometimes loosely spoken of as "type-setting machines." They do not, however, set separate types. What they do set into a line is a row of "matrices" ("mats") each with the desired letter incised into its edge. These, together with the necessary spaces between the words, are lined up and used to make a casting in soft metal representing a line of type. This casting is called a "slug." It is not really a "line of type" but a single piece of metal, although "line-o'-type" gave the name to the first of these slug-casting machines invented, the Mergenthaler linotype. Composing machines will be described in greater detail further on. The slugs are ejected from the machine into a special galley attached to it, and when a mass of eight or ten inches of slugs has accumulated, it is transferred to the ordinary galleys just as is the hand-set type from the hand compositors' sticks. Often a single galley contains matter assembled from both the hand composition and machine composition departments. For instance, in some shops the reporter's story will be set on the machines, while the headlines above it, requiring larger type, will be hand set.

PROOFING AND CORRECTING. Intermediate between the composing room and the make-up floor is the realm of the "copy-cutter." This functionary has a great deal to do with the efficiency of the shop, and his middle name is system. Woe unto the young reporter who fails to understand the copy-cutter's method of operating and who on an errand into the shop interferes with the smooth working of his arrangements. The copy-cutter is the man whom it is well to consult first in all typographical difficulties. What he receives is all the copy that comes from the editorial side—the stories of the reporters, the heads and directions from the copy-readers, and the editorials from the editor and editorial writers. What leaves his department is the perfected galley of type matter. Copy and type are all under his jurisdiction until transmuted into galleys of corrected and correctly arranged type and slugs, ready without further change to be put into the pages on the make-up floor. Near the copy-cutter's desk is the "dump," a "battery" or "bank" where the galleys rest until they are filled with type to be proofed, and other batteries or banks (tables) where after being proofed they wait until they are corrected; near these is the proof press where proofs of the newly filled galleys are "pulled"; not too far away is the "proof room" where the proofs are read and marked to indicate the corrections that have to be made.

PULLING PROOFS. For pulling proofs several kinds of presses are used, none of them very complicated. In the small shops the "galley press" is common. Here the type matter in the galley is inked with a "brayer"—a hand roller. The proof boy puts a dab of ink on a slab of glass or marble and rolls it with the brayer until it is well distributed. Then he rolls the brayer over the face of the type in the galley. A strip of paper of appropriate size is placed on the type and a large roller, heavy enough to give good "impression" is rolled by hand over the paper. The proof is sent, together with the copy, to the proof room. The proof-reader goes over the proof, marking upon its margin all the errors he can detect. Sometimes he goes over this alone, referring to the copy only when doubts arise. A more careful practice is to supply the proof-reader with a "copy-holder," an assistant. One or the other of them then reads the copy or proof aloud.

The proof-reader marks the mistakes shown by discrepancies between proof and copy. The proof room man has a peculiar method of reading, intoning as he reads all the punctuation marks and typographical peculiarities, and calling attention to the spelling of such words as "Stewart," "Stuart." The proof-reader's marked proof is sent back to the compositors to have the corrections made and inserted in the galleys, which meanwhile rest upon the correction bank. On larger papers several proofs are pulled and more rapid equipment is called for than the simple, hand-worked galley press.

Making up. Now that the matter from the different machines and from the hand composing room has been brought together and properly arranged in the galleys on the bank, every head connected with its appropriate story, and all corrections made, the next process is to get the type matter into the page, properly arranged. This is done by a printer (now acting as "floorman on make-up" and not as "compositor") under the supervision of some one from the office. On a newspaper, the person from the editorial side who comes into the shop to supervise the make-up, is called the make-up editor. He may be an assistant managing editor (on a morning paper frequently called "night editor"), a department editor in charge of sports, markets, or some other special page, or on a smaller paper the editor himself or the managing editor. It is at this point that the young newspaper man often acquires his first responsible executive experience with printing processes; hence the duties of the make-up editor will be described in greater detail later on. The make-up takes place in that part of the shop called the "floor." The galleys containing the advertisements have previously been brought here from the composing room and have usually already been arranged in the page under instructions from the business office before the make-up editor appears. The galleys containing news and other editorial matter have also been brought to hand and so laid out as to be easily found.

Equipment for Make-up. The make-up takes place around a table with a stone or metal top called the "imposing stone" or, more simply, "stone"; this name applies to the table whatever the material of which it is constructed. On large newspapers there are numerous small metal topped tables (called "turtles"), each the exact size of a newspaper page, and mounted on large casters. These serve as "stones." In any case, on the imposing surface is laid a strong steel frame, intended to surround the type matter when made up. This is called the "chase" and when the type and other matter is placed within the chase and firmly locked in, the whole is called the "form."

The chase is not a tray; it is bottomless and the type must be so carefully justified as to be held in place by pressure only. Handy to the stone, besides the galleys of type matter, there must be also all the things that are to go into the chase and transform it into a completed form, ready for the press. This material includes column rules, cut-off rules, leads, slugs, cuts for illustrations, dashes, page numbers, page titles, "carry over" or "jump" lines, dates, "furniture," quoins, most of which will be treated later. Suffice it to say here that the floorman, under the instructions of the make-up editor, fills the page, justifies it so that it will "lift" without letting any individual type slide out, and "locks it up." If the justification is well done, the form is now a unit held together by lateral pressure alone, and can be slid or lifted from the stone, and put either upon the press directly or upon the stereotyping tables. In smaller shops it goes directly to the press.

THE PRESS. The form now leaves that part of the shop which is called the floor and enters the press room—though in a small shop there are usually no partitions dividing them. The press is simply a device for applying even pressure to the back of a sheet of paper presented to the inked type. It does not differ in principle from the apparatus with which the proofs were taken, but has many appliances to save labor in the applying of the ink and the inserting and removing of the paper, and to insure accuracy and increase the speed of production. In the simplest form of press, that first used by Gutenberg between 1450 and 1456, the inked form, with the paper lying upon it, was slid under an overhanging flat surface, and the latter was lowered by turning a screw. A press not greatly different from this (but with a lever principle substituted for the screw) is still in use for the printing of small weekly papers and for pulling proofs. However, the press in the shop in which the beginner is making his first observations is likely to appear much more complicated than this. It is possible that the type itself does not actually go upon the press, but that a casting of the type page is made, and that this casting ("stereotype") is used for the actual printing. Still, the principle remains the same; presses are essentially simple and their function is always to press the blank paper evenly against the inked surface. The more complicated sorts of apparatus will be analyzed later; here the purpose is to concentrate on the essentials by way of introduction. Not until later in his career is the young newspaper man likely to have any serious responsibilities connected with the press room.

ASSIGNMENT

Visit a printing office and identify the departments described in this chapter. Find and identify also each of the following pieces of equipment, satisfying yourself that you know it both by appearance and by function well enough to use the word as part of your permanent vocabulary (the numbers in parentheses give the pages in this book on which the item is mentioned or described): linotype (27), battery (13 and 15), bank (15), dump (15), magazines (32), brayer (15), case (9), box (9, 107), rack (12), upper case (12), lower case (12), font (26, 28), chase (18), composing rule (13), composing stick (9), leads (18, 48, 76), slugs, (14, 28), rules (48), furniture (18), quoins (18), form (18), imposing stone (18), turtle (18), galley (10), linotype matrix (14, 32), stereotype matrix (169), points (9, 46), proof press (15), proofs (15), reglet (48).

Until this simple preliminary terminology has been mastered, the reporter will find it almost impossible to talk intelligently with printers about his or their work, or to acquire from them any of their large store of technical knowledge that is likely to prove so important to him later on. Not only in the composing room is such a vocabulary of importance to the young newspaper man, but even in the editorial rooms the lack of knowledge of these terms will render him conspicuous as a "cub." There are not many words in the entire list that do not appear in the daily discussions between the managing and city editors and the copy-readers. The experienced reporter understands them all and is able to use them in his daily work.

II

Machine Composition

Modern Equipment. While hand composition is the fundamental process in printing, and the hand compositor and the floorman, dealing with their fascinating problems of arrangement and make-up, are likely to become the young newspaper man's most useful instructors in the typographic art, the fact remains that almost all of his own copy in his earlier stages is likely to be set on the composing machines. If he becomes at all fertile in ideas, and desirous of introducing into his stories such degree of typographical vivacity as his editors may permit, it is incumbent upon him to learn how machine composition is produced and what its limitations are. The machines manufactured today have a vast repertory of things they can do: their magazines supply letters over a large range of sizes and in a wide variety of faces; they can set interesting and attractive rules and borders; they can often produce "boxed" stories with little trouble; they are adjustable as to length of line and thickness of slug; and they can turn out a certain limited assortment of pleasing typographic ornament. But no mistake on the part of the young newspaper man would be more ruthlessly criticized than for him to assume that whatever a composing machine can do under one set of conditions he can freely call upon it to do for him at any time. He must study the processes in some detail in order to know what is practicable under given conditions.

LIMITATIONS ON USE OF MACHINES. In one shop at a given time it may be perfectly legitimate to underscore a word or paragraph to be set in italic letters; in the same shop at another time this might involve an amount of delay, confusion, and expense that the editor would not dream of permitting. Italics are not much used in newspaper practice nor are foreign language words requiring diacritical marks, though these can be used when it is sufficiently important. A certain style of bold-face letter may be quite available at all times, to be used either for whole paragraphs or for single words in the copy, while another face, also occasionally used in the paper, may be available only for early copy and for some especially compelling reasons, explicit permission to use it being required. Sometimes it is desirable to suggest that the first few lines of the lead of a story be set in larger type than the rest of the article, or that it be set two columns wide; at other times this would be regarded as impracticable. Certain kinds of boxes may be readily available, free to reporters whenever their stories would be improved by boxing; other kinds of boxes, perhaps only slightly different, may require laborious and expensive work in the hand composition department. Certain ways of marking corrections or later changes in an article involve little time and cause very slight trouble in the mechanical department; other changes are troublesome and expensive. Before these matters can be intelligently discussed, it is necessary for the beginner to understand the composing machines and to acquire a vocabulary covering their parts, accessories, and functions. He should carefully study the "style" of his paper and observe what devices are customarily employed, and what are avoided.

VARIETIES OF COMPOSING MACHINES. The commonest composing machines in newspaper plants are the linotype and the intertype. These will be described in considerable detail in this chapter. Certain other devices require at least a passing word.

THE LUDLOW. In rapidly increasing use in newspaper shops is found the Ludlow slug casting machine. This involves a combination of hand work and mechanical process. It is employed for casting large-sized letters for use in display advertisements. It is in essence a steel table with a slot in it. Brass matrices, incised with the letters of the alphabet, are assembled by hand and placed over this slot and locked into place. Molten metal is then forced up through the slot from beneath and against the matrices, after which the matrices are distributed to their appropriate boxes by hand. Simple as this seems, it is proving extremely useful. It obviates the necessity of keeping on hand a large supply of big type. The lower end of the slug is not so thick as the letter; the letters overhang the leads and blank slugs which are placed adjacent to the Ludlow line in the form. The Ludlow is less used on the news side of the shop.

THE UNITYPE. While most composing machines are not, strictly speaking, type-setting machines, still such machines do exist. The unitype is found in smaller offices. The types are released and carried into place at a touch upon the appropriate letter in a keyboard, and the line is justified by hand. The types are "nicked" in the side of the body differently for the different letters and points, and are redistributed from the top of the machine where the type is placed, a short galleyful at a time, by hand. Channels for each letter are arranged vertically on the sides of a vertical cylinder, part of which revolves, passing under the block of type deposited above. Each channel in the upper, or revolving, part takes in a line of type at a time.

In the lower, or stationary part, each channel will admit only the types that are nicked properly for one particular letter, and only the right letters drop down as the upper channels pass over the tops of the lower ones. Thus the types return to their place, to be released again when the proper key is touched.

The Monotype. One of the most versatile of the composing machines is the monotype. As its name indicates, it casts one type at a time. The apparatus consists of two parts, the keyboard and the caster. The final product of the keyboard is a strip of paper perforated according to an intricate system, and when this strip is fed into the second part of the apparatus, the caster, the perforations control the action of the casting apparatus and the letters come out of the mould correctly composed in the order in which the keys on the keyboard were touched. The caster half of the monotype is automatic, except for the need of the proper adjustments and the care which any fine piece of machinery must have. The essential action of the monotype caster is the shifting of the set of matrices backward and forward and sidewise, successively presenting the faces of different letters to the mouth of the mould where the letters are cast. The monotype can be used in three principal ways: as a composing machine, as a type casting machine, and (only part of the apparatus is needed for this) as a caster of leads and rules. For the last named purpose the partly equipped monotype is becoming quite common in newspaper offices; the shop profits greatly by having always on hand a fine large assortment of new unbattered leads and rules. As a complete composing machine the monotype is more used for fine book and magazine work than for newspaper publication.

Linotypes and Intertypes. The device of principal interest to the newspaper man, undoubtedly, is the linotype, a description of which will also serve roughly to cover the main points of another common machine produced by a different manufacturer, the intertype. These machines are to become the life-long companions of every person who engages in the profession of journalism in any capacity, and though their operation may appear somewhat intricate the beginner will do well to devote some effort to studying them, for such an initial knowledge makes possible the accretion of much information of great practical importance later on. The paragraphs immediately following should be read in connection with an inspection of one of the machines in operation; it is doubtful if they can be fully understood when read academically or even with the help of a picture.

Basis of the Invention. Slug casting machines came rapidly into use in newspaper offices in the years following 1885. For the previous decade Ottmar Mergenthaler [1] had been experimenting with various devices for mechanical typesetting. He faced two problems: an arrangement for assembling the type through operation of a keyboard, and a method of distributing the type back into the cases, each letter in its appropriate box. The first problem would be comparatively easy if the second could be solved. He finally succeeded by the ingenious idea of not redistributing the type itself, but of casting it anew each time (a "line" or "slug" at a time) and redistributing, not the type, but the matrices to their boxes immediately after the casting. In studying the slug casting machine it should be borne in mind that it is nothing more than a device for holding a row of correctly assembled brass matrices against molten metal until a casting is formed, for trimming and delivering the casting, and for putting the matrices back into their proper places where they can be called into use again by a touch on the keyboard. The completed casting is called the "slug" and it serves the purpose of a line of type—hence the name of Mergenthaler's machine, the "lin(e)-o(f)-type."

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[1] Ottmar Mergenthaler, born in Württemberg, Germany, May 10, 1854; came to America, 1872. As a watch and clock maker and employee in electrical instrument works he tried to perfect a typewriter which would duplicate the appearance of type faces, with the idea that the result could be lithographed. His next attempt was to impress characters into papier-maché, and to cast from these matrices by the stereotype process. Both failed. He conceived the basic idea of the linotype in 1883. The linotype company was formed in 1885, the space band patents were acquired later, and a revolution in newspaper publication methods began. The first perfected machines were used in 1886 in the offices of the New York *Tribune*, the Chicago *Daily News*, and the Louisville *Courier-Journal*. Mergenthaler died October 28, 1899.

TO UNDERSTAND THE LINOTYPE. While it looks extremely complex, and indeed it has been enriched through the years with numerous devices of convenience and accuracy, the slug casting machine is not at all beyond the comprehension of anyone with some slight mechanical sense who will observe it closely in operation. The problem can best be attacked in four initial lessons, as follows:

1. Follow the metal from where it begins its journey, a molten liquid in the melting pot, to where it is delivered as a completed casting into the galley, ready to be removed and used like type.

2. Follow the matrices from their appropriate channels in the magazine, from which they are released by a touch on the keyboard, through their complete circuit until they are returned, each to its own channel in the magazine, ready to be used again.

3. Follow the space bands from their place in their box through their complete circuit, watching

them perform their function and return to their box.

4. Follow the power from the motor or main shaft through the various cams, and observe how each cam calls into action at exactly the right moment some useful device of accuracy or convenience.

When these four lessons are mastered with some degree of competency the observer will have the basis of intelligent discussion of the machine, and he can acquire knowledge, one by one, of the functions of the various attachments and conveniences that make the slug casting machine the marvel of human ingenuity that it is.

FROM MOLTEN METAL TO COMPLETED SLUG. Start with the metal pot, at the operator's left, into which ingots of metal—lead with a slight alloy of tin and antimony [1] to stiffen it, and to prevent shrinkage in cooling—are introduced and kept molten by gas, oil, or electricity. Note how, when the operator touches the lever just below the keyboard, the mould wheel makes a quarter turn, carrying the mould into a position exactly opposite the mouth of the pot of molten metal. Note that at the moment when the line of matrices is brought into contact with the outside of

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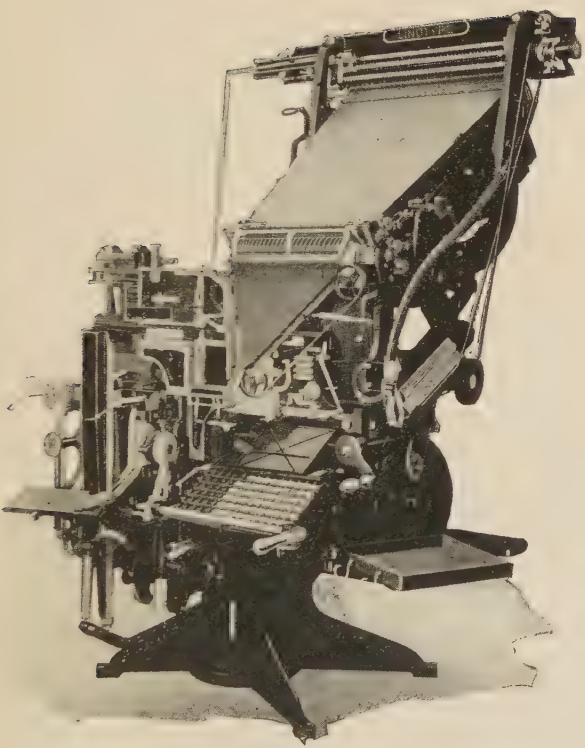
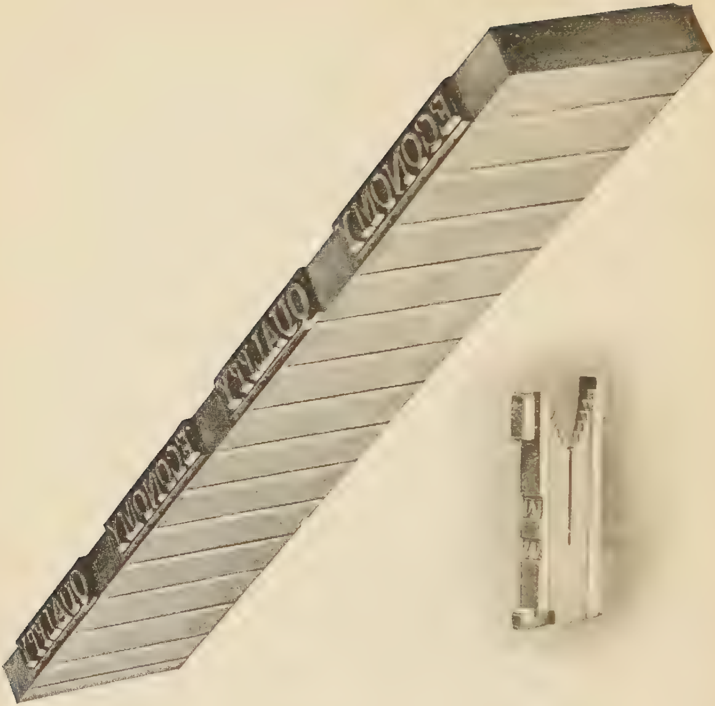
[1] Lead, 85 percent; antimony, 11 percent; tin 4 percent. All the metal loosely spoken of as lead in this book is lead alloyed with varying amounts of other metals, usually tin and antimony, sometimes a small amount of copper.

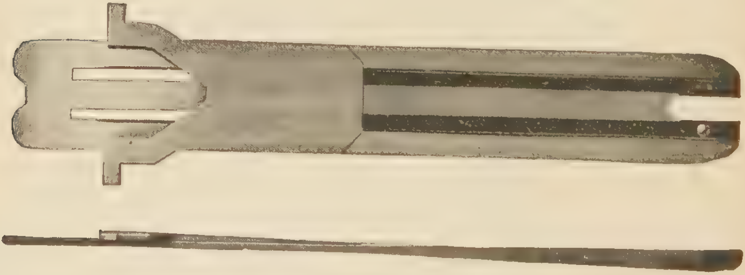


The Linotype



SLUG

MATRIX



SPACEBAND

Component Parts of the Linotype

the empty mould in the mould wheel, the pot also moves forward until its mouth is also brought into close contact with the inside of the empty mould in the mould wheel, and how at this moment a plunger pump within the metal pot sends a spurt of metal through a series of round holes into the empty mould. (Examine the bottom of a slug and observe the traces of the shape of the holes through which the metal was spurted.) Now observe how the cooling slug is carried three quarters of the way around the wheel to the point of delivery, the bottom being trimmed by being carried past a knife on its journey. The next process necessary is to get the slug out of the mould and to trim it to an even thickness. This is done in a single operation by a powerful slab of sheet steel called the ejector blade, which shoves against the bottom of the slug, drives it past fixed knives that shave it to an even thickness, and drops it, still rather hot, into the waiting galley. Once more examine a completed slug and observe how the inventor relieved the ejector blade and the knife of the necessity of taking a solid shaving off a whole side of the slug. The greater part of this side of the slug was cast too thin to touch the knife at all; only flanges or "ribs" were left the full thickness and a bit over, and it is only on these ribs that one observes the brightened surface that shows the work of the trimming knife. On the larger sizes of slug (head letters, for instance), this device, which leaves the large slugs partially hollow, makes possible a considerable saving in metal and also in the amount of strength necessary for lifting and carrying masses of slugs about the shop.

THE CIRCUIT OF THE MATRICES. Before operations begin the matrices wait, arranged in long vertical channels in the magazine, the trapezium shaped slab at the top of the machine. A touch on any letter on the keyboard will release a corresponding matrix which will fall by gravity down upon the small rapidly revolving leather belt in front of the operator which is one of the first things the observer will notice in those types of machine in which this is not covered. The matrices (or "mats," as they are commonly called) are finely finished slabs of brass of a peculiar shape. Their essential parts are the letters incised into their edges, the flanges, or ears, by which they are carried and held and lifted and shoved through the machine, and the curiously notched triangles cut into the top, which have a special function to perform. Observe that the notches on any two "e's" are identical, but that no other letter is notched in the same way. Each letter is notched in its own peculiar way, and it is by these notches that the machine is enabled to return each letter to its correct channel. Now, to return to the reason for the revolving belt upon which the matrices fall. Its purpose is to carry the matrices to the left and deliver them into the assembler where they are to form a line. Why is it not, then, merely a horizontal belt, instead of being placed at an angle of about 45 degrees? Because the letters at the left of the magazine ("e," for instance) have a much shorter distance to travel than those in the right-hand channels ("x," for instance). The belt moves the long-circuit letters faster than gravity moves the short-circuit letters, and all, completing their journeys in the same length of time though the distances are different, arrive at the assembler in the exact order in which their keys were touched. Without the inclined revolving belt a rapid operator attempting to set "axe" might find that the slug read "aex."

THE MATRICES IN LINE. The matrices, having traveled down the belt, are now in line in the assembler, interspersed with space bands. These space bands are long, projecting prongs of bright steel, which account for the spaces between the words in the completed slug. They do not come from the magazine, but have a separate circuit of their own and will be treated in a later paragraph. When the line is assembled the operator moves a lever just below the keyboard, and the whole machine begins a general convulsive movement. Watch the line of matrices. First they travel upward about four inches in the "assembler elevator," then to the left about nine inches along the "intermediate channel" to the "first elevator," then down about four inches until the letters incised on their edges are exactly opposite the mould in the wheel and the mouth of the metal pot. Now they are firmly locked in this position and the space bands expanded to full out or "justify" the line as will be explained in a subsequent paragraph. Now the mould wheel moves forward slightly to bring the front of the empty mould into close contact with the line of mats, the mouth of the metal pot moves forward into close contact with the back of the empty mould, a pump plunger within the metal pot operates and forces a spurt of metal into the mould, and the slug is cast. The observer has already watched the subsequent travels of the slug; this time he should keep his eye on the line of mats.

Distribution of the Mats. The mats now retrace their course up the first elevator, but they do not stop at the intermediate channel from which they came. They ascend right past it, going up about eight inches until opposite the "upper transfer channel." Along this they travel eight inches to the right and are shoved on to the "second elevator bar." Until now the mats have been held and guided by their flanges or ears. Now a change takes place. To the second elevator bar they "cling by their teeth." As the space bands have no teeth, they cannot ascend the second elevator, and at this point the mats part company with the space bands. When the mats are safely aboard, the long, uncanny second elevator arm rises with a long, swinging motion, the most human in appearance of all the actions of the machine, and sweeps them up to the top of the machine for distribution, leaving the space bands behind. When the elevator arm is at the top of its course the mats are shoved to the right from the elevator bar, to which they are clinging by their teeth, to another long bar, the "distributor bar," to which they also cling in the same way. Along this they travel to the right, propelled by revolving screws which press against their flanges. However, not all the ridges to which their teeth are clinging extend all the way along the bar. First the "e's" (lower case) drop off, coming to the end of the combination of ridges sustaining them, then the "t's," and then the "a's," the most used letters dropping off first and making the shortest circuits. The capital letters, being less used than the lower case letters, make much longer circuits, because they are given a combination of teeth that enables them to hang on longer. Each letter drops into its appropriate channel and is ready to be used again. This is one of the basic devices of the slug casting machine. The teeth of the mats are carefully arranged, and are as accurate as the lugs in a Yale lock.

THE SPACE BANDS. The circuit of the space bands is the same as that of the mats, except that they are short-circuited, and pass from the upper transfer channel directly back into their box (which is close by) and so, when called again into use, directly into the assembling line, without ascending the second elevator, or passing along the distributor bar, or through the channels in the magazine. This is because they have no teeth and the second elevator cannot pick them up. However, the bands themselves constitute an ingenious device and are worthy of a close examination. The observer should take one in his hand and study it. Notice that it has flanges, or ears, and therefore will travel with the mats so long as the mats are propelled and handled by their flanges. Then notice the absence of teeth. But the leading characteristic of the space band is that it serves the purpose of a blank mat *of expansible thickness*. This is because it is composed of two wedges of identical acuteness, sliding upon each other (as do quoins), a short one with the point down and a long one with the pointed end up. When the line is in place in front of the empty mould (as previously stated) a bar rises from beneath, presses against the long projecting ends of the longer wedges, driving the wedges against each other, and so expands the line to its full width by increasing the spaces between the words. This brings it about that the lines in printing are of even length, and not irregular at the right-hand side of the page like typewriter lines.

CONTINUATION OF STUDY OF MACHINE. The three lessons in observation just outlined cover the basic principles of the slug casting machine from the point of view of their purpose and effect. Further study of the machine, which cannot be treated in great detail here, can best be conducted by a close observation of the various functions of the "cam shaft." This is a main shaft several feet long, running across the back of the machine. Upon this shaft are mounted a large number of wheels, or cams, of very irregular shape. When the cam shaft revolves, which it does when the operator completes a line and moves the lever just below the keyboard, each cam governs, and accurately times, some action of the machine to carry out the purposes described in the preceding paragraphs. A clear idea of the whole machine may best be obtained by tracing the operation of these cams, one at a time. Later in life the reporter will probably have to decide on the purchase of new equipment, will have to judge between different machines, and should have sufficient knowledge of the mechanism and a sufficient vocabulary of machine parts to talk intelligently with salesmen and appreciate their arguments.

Preparation for Executive Positions. When he reaches an executive position, the reporter will need to be able to judge the qualifications of the various operators, as well as other employees with whom he comes into contact. He should observe closely not only the speed of the different operators—how many galleys each can turn out in a given time—but how free their work is from typographical errors. More than this, the good operator is one who can take the best care of the machine, keep it at all times in condition to render the best service, and prolong its life. Operating is far more than merely touching the keys on the keyboard. The machine, the mats, and especially the space bands need to be kept scrupulously clean, or all sorts of mechanical trouble will result through the disorganization of the delicate adjustments. The metal also needs skillful treatment, and each time the machine is readjusted to a different kind of work, every adjustment should be made with the utmost accuracy or the product will be inferior and the machine deteriorate. Good work should be noticed, appreciated, and praised.

Machine Capacity. Machines are manufactured in an almost limitless variety of attachments and auxiliary devices. The reporter should at once familiarize himself with (a) what the machines in his own plant can accomplish without change of magazines or moulds, and (b) what they can do when time is less an object. The experienced newspaper man will be chary of suggesting typographical novelties, odd widths of column, hand-set heads, changes in size of type, etc., in the rush hours just preceding press time, while in the earlier hours of the day he may do well to introduce typographical niceties into his work.

STRAIGHT WORK. Let the observer again take in his hand one of the mats. It is a letter "e," for instance. Looking at the edge he will see that in most of the smaller sizes instead of there being a single "e" on its edge, as may have been implied above, there are, in fact, two "e's." One is the ordinary roman "e," the body type of the newspaper, and the other may be an italic "*e*," or it may be a boldface "**e**." Let him note well and remember which of the latter is included in the magazine ordinarily used for newspaper composition. If it is the italic, he is free to mark any part of his story, by underlining either single words or passages for emphasis, and they will be set in italics. He may also call freely for the use of "small caps." But such magazines are ordinarily used for book, pamphlet, and magazine work. The newspaper matrices ordinarily contain a combination of roman and boldface. Therefore he should not call for either italics or small caps, at least not during the rush hours, but may call freely for boldface where that is appropriate and in accord with the general style of the paper. The boldface may be used for emphatic passages, but is not usually considered appropriate for the emphasizing of single words in the text as is italic. The principal use of this boldface on most newspapers is for the "sub-heads" and for the smallest size of the regular heads and the smallest decks in the big heads. Any head to be set in this type, which is on the same font of mats as the roman body type, can be written on the same sheet of paper as the "story." Any other sort of head should be written on a separate sheet, as it is likely to be sent to a different machine, or set at a different time. Returning now to the study of the machine, the reporter should observe how the mats are held by their flanges at two different levels in the assembling line, so that some of them will present their roman letters to the mould, and some their blackface or italic letters.

"Changing Over." In the paragraphs above, the machine was treated as if it carried only one magazine. Most late models, however, contain several regular magazines and often a small, oblong, "auxiliary" magazine mounted at the right of the machine. It involves some slight time, trouble, and expense to change over to one of these additional regular magazines, and then to change back to the principal magazine. It involves still more time and expense to change to a different length and thickness of line, and a great deal more to resort to a reserve magazine which is hanging on the wall and not actually on the machine. This trouble differs on different models. On some of the latest a surprising variety of changes can be made with almost no trouble. The young newspaper man looking forward to an executive position, should familiarize himself with

(a) just what fonts the plant possesses;

(b) just what types and sizes are ordinarily on the machine;

(c) just what difficulties are involved in the various sorts of changing over in the particular shop with which he is connected.

He should scrupulously refrain from suggesting troublesome changes at the rush hours, and at any time unless the effect to be obtained is worth the trouble. It costs in the neighborhood of four dollars an hour to operate the machine. A delay costs about seven cents a minute in cash and more than that in confusion if ordered in the rush hours. The time of a single changing over should be multiplied by four at least, as there is the changing back to be considered, and usually a second change over for the setting of correction lines, and a second changing back. Often the latter changes are a small affair and must be carried out at the cost of interrupting a later important piece of work—corrections are made as the rush hours approach, even if the original composition was early.

Two-Letter Fonts. An ordinary newspaper set of matrices in the linotype magazine is as follows:

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
abcdefghijklmnopqrstuvwxyz
ﬁﬂﬀﬃﬄ ,.:;?(,‘!-).’*1234567890$..@℔&—
ﬁﬂﬀﬃﬄ...,.:;?(|‘!-) ’*1234567890$ @℔&—
Sorts: ½⅓⅔¼¾⅛⅜⅝⅞æœÆŒ[]†‡%£¶§“ ”
Sorts: ½⅓⅔¼¾⅛⅜⅝⅞æœÆŒ[]†‡%£¶§“ ”

The names of the types used in this illustration are 8-point Ionic No. 5 (the roman) and Bold Face No. 2. The first three double lines run in the magazine; the last double line, marked "sorts," rests in the box of sorts at the operator's right. The sorts have to be set into the assembler by hand.

This is a rich assortment well adapted to newspaper use. Generally speaking, the reporter, in writing his story, should confine himself to these characters; he certainly should in late stories submitted during the rush hours, unless the reasons are very compelling for bringing in other forms. When other forms are specified, he should know pretty definitely how much extra trouble they are likely to involve under the conditions existing in his own plant.

As contrasted with a newspaper font, a typical book font is as follows:

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
abcdefghijklmnopqrstuvwxyz
ﬁﬂﬀﬃﬄ ,.:;? (|'!-) .'*1234567890$..œæ&—
*ﬁ*Y*ﬀ*WM..,.S*;?*.AI'*!*-QL'OVBCDEFGRTJP HKN—

Sorts:

½⅓⅔¼¾⅛⅜⅝⅞*ﬂﬃﬁﬄ*“”[]§%℔@†‡¶£*:1234567890$Z&*XZ&*()*
½⅓⅔¼¾⅛⅜⅝⅞*ﬂﬃﬁﬄ*“”[]§%℔@†‡¶£*:1234567890$Z&*XZ&*()*

Note that in this set the two boldface alphabets (capitals and lower case) are eliminated, and *three* alphabets are crowded into their place: italic capitals, italic lower case, and roman small capitals. As only the same number of channels are available, more characters have to be handled as sorts. Note that this set gives six modes of expression, each of which should be correctly marked upon the copy if its use is desired: ROMAN CAPITALS; Roman Capitals and Lower Case combined; *ITALIC CAPITALS; Italic capitals and Lower Case* combined; Roman Capitals and Small Caps combined; and small capitals. Where fonts of this kind are easily available it is obvious that much flexibility of emphasis and appearance is possible, and the young man who expects to derive his living from the printing press should familiarize himself with their uses.

ASSIGNMENT

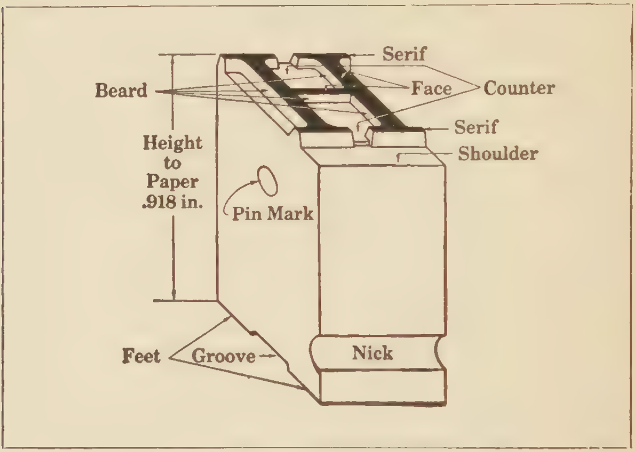
Trace the four circuits in the machine: the mats, the space bands, the metal, the power. Make a careful memorandum of the following points: (a) What are the fonts that comprise the two-letter combinations *in regular newspaper use* in your shop? (b) What is the length and thickness of the slug cast by the mould in regular newspaper use? (c) What are the fonts in the other magazines *actually on the machine*, which can therefore be resorted to by *slight* adjustments? (d) What are the length and thickness of the other moulds *actually on the mould wheel*, which can therefore be resorted to with *slight* readjustments? (e) What are the reserve magazines possessed by the plant but not actually on the machine? (f) How long does it take in your shop to change over to one of these and to change back? (g) How long does it take in your shop to change over to an odd size of mould which is not actually on the machine but which is possessed in reserve? (h) On a given job is it better to change the mould or to cast the slugs overlength and saw them off? (i) How long does it take to adjust a universal adjustable mould for an odd size?

When this knowledge is mastered the newspaper man is equipped to avoid giving impracticable instructions to the mechanical department.

III

Nomenclature of Type

SIZES OF TYPES. There is one more line of typographic study the young newspaper man should begin to master at the outset of his career, and that is the nomenclature of type. If intelligently followed, the study of type forms will continually open up before him year after year, revealing new harmonies and new historical perspectives, and add greatly to his ability to supervise his shop in such a way as to add to the excellence of its output. He should start with measurements of size. It is not the "face" of type that is measured; it is the "body" or block of metal that supports the face. The distance from the top to the bottom of the face of the letter "A," for instance, is not the full height of the body of that letter if it is intended for use with an alphabet in the lower case. The type bodies must all be uniform and the body of the "A" must extend below the bottom of the face of the letter far enough to allow for the descenders on the "g," "p," "y," etc., of the same alphabet. This distance, from the top to bottom of the body is expressed in "points." It is ordinarily said that



A PRINTING TYPE

there are 72 points to an inch. This, however, is approximate; 72 points are equal to .99648 of an inch. The point system is comparatively new; following are examples of several of the smaller sizes, together with the more important of the older size-names which the point system has superseded. The old named sizes did not correspond accurately with the sizes under the point system now used, and all but a few of the names are virtually obsolete. There are several of them, however, that should be memorized. "Agate" is commonly em-

THIS IS 5 POINT (PEARL) TYPE.
This is 5 point (Pearl) type.
THIS IS 5½ POINT (AGATE) TYPE.
This is 5½ point (Agate) type.
THIS IS 6 POINT (NONPAREIL) TYPE.
This is 6 point (Nonpareil) type.
THIS IS 7 POINT (MINION) TYPE.
This is 7 point (Minion) type.
THIS IS 8 POINT (BREVIER) TYPE.
This is 8 point (Brevier) type.
THIS IS 9 POINT (BOURGEOIS) TYPE.
This is 9 point (Bourgeois) type.
THIS IS 10 POINT (LONG PRIMER) TYPE.
This is 10 point (Long Primer) type.
THIS IS 11 POINT (SMALL PICA) TYPE.
This is 11 point (Small Pica) type.
THIS IS 12 POINT (PICA) TYPE.
This is 12 point (Pica) type.
THIS IS 18 POINT
This is 18 point
THIS IS 24 POINT
This is 24 Point
THIS IS 30 POINT
This is 30 point
THIS IS 36 POINT
This is 36 point

ployed as a measure of advertising space. An "agate line" is one fourteenth of an inch in vertical measure and one column wide. "Nonpareil" is employed as a synonym for 6-point, and is in daily use as expressing the thickness of lead and reglet (the non-printing strips) and rules (the printing strips) that are inserted to give space between bodies of type or linotype slugs. In still commoner use is "pica" or 12-point. Six "picas" make an (approximate) inch. One says that a newspaper column is "twelve picas wide," or even, less explicitly, "twelve ems wide." The full form of the latter expression would be "twelve pica ems wide." The em is a variable measure, different for each size of type. As the letter "M" is on a square body, "em" expresses a horizontal measure equal to the vertical dimension of the same letter. "Pica" is such a common measure, however, that unless specified, "em" means "pica."

HORIZONTAL MEASURE OF TYPE FACES. The width of type is expressed less definitely than its height. Letters are spoken of as "extra condensed" or "condensed" if narrow; and "extended," "expanded," or "extra expanded" if broad. The letters used in head lines are likely to be "extra condensed," while the "expanded" styles are more used in the advertisements. The body of the newspaper is set in a type that is only very slightly condensed. The normal letter is one in which the body of the "M" is square.

TYPE "SERIES" OR "FAMILIES." Types are increasingly manufactured in large aggregations, each containing many different sizes, different degrees of blackness of line, different slopes (roman and italic), different degrees of breadth or leanness, and different treatment of the surface (solid black or shaded), and yet all bearing a family likeness one to another, and forming an harmonious composition when used together. The young newspaper man cannot be said to be acquiring an eye for type until he can recognize at sight at least a few of these series in any of their protean manifestations. Let him try his eye first on the Cheltenham family, one of the most strongly marked series, and one which has been extraordinarily popular both for advertising composition and for head letters. Cheltenham is made in all heights and widths, in numerous shapes, and with all sorts of surface treatment. Where, then, is the family characteristic found, if not in the size, or shape, or blackness, or slope, or surface? When analyzed, the family likeness will be found to reside in the "serif," the little horizontal spur at the corners of the letters. In Cheltenham the serif has a peculiar, sturdy, strongly rounded appearance. In the Bodoni series the serif, oblong, square cornered, is attached to the letter at a sharp angle. In the famous Caslon the serif is sharper than in Cheltenham, more curved than Bodoni, and has a peculiar, graceful sweep of its own. The gothic series (incorrectly named;[1] the European description "sans-serif," is better) is easily recognizable because it possesses no serifs. "Gothic" in spite of its lack of beauty is much used for newspaper headlines, because it is susceptible of great condensation, crowding a comparatively large type into a narrow newspaper column.

NAMES OF TYPE. Type is identified by stating, first, its body size in points; second, the name of the series; third, the degree of blackness; and lastly, the slope and the degree of condensation or expansion. Not all of these are used in each name. Here are a few representative type identifications:

28-POINT GOTHIC EXTRA CONDENSED

18-point Bodoni Bold

14-point Cheltenham Wide

14-point Cheltenham Bold

12-point Ronaldson Oldstyle Italic

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[1] In this work the word Gothic when used with a capital G refers to medieval *text* type; when the American usage is followed and block letter is meant the "g" is lower case: gothic.

12-Point Century Bold Expanded

10-point De Vinne

12-point Bookman

12-point Bodoni Bold Italic

11-point Antique Number One

14-point Caslon

14-point Bodoni Book

12-point Original Old Style

11-point Old Style Number One

12-point De Vinne

11-point Modern Number One

10-point Elzevir Number Three

12-point Garamond

10-point Scotch

6-point Century

The importance of knowing types by their correct names is perhaps slight in the earliest stages of a newspaper man's career, but increases rapidly as he assumes executive responsibilities and has closer and closer dealings with the mechanical department and with printers, and comes to have the deciding word in the purchase of new equipment. The forms of type, and the harmonious relationship between the different forms, are a complicated subject, and it is well to begin early to acquire the ability to recognize and correctly name the various types.

ASSIGNMENT

Learn the correct names of the various types in most common use in the establishment with which you are connected. If it is possible to obtain the use of a "specimen book" published by the typefounders or by the composing machine manufacturer this will furnish an invaluable basis of study. The training of the eye to recognize type forms can be acquired only gradually; but one can almost at once master the ability to distinguish a 24-point headletter from a 36-point headletter; a Cheltenham from a gothic; a Bodoni from a Caslon; a condensed from an expanded. It may be well to make a scrap book showing, as of first importance, the sizes and styles used in the headlines, including the occasional banner heads, and later the various conspicuous forms appearing in the advertisements.

The Copy-reader

IV

The Office System

The First Promotion. The day comes in every newspaper office when it is necessary to make a sudden draft upon the force of reporters to fill a vacancy, either temporary or permanent, at the copy desk. A certain period of experience at the desk is of great value even to the reporter who wishes to avoid executive posts and to continue as a writing man exclusively, while for the young man who aspires to became a newspaper executive, it offers extremely necessary training for his future work. In the emergency of a vacancy, the opportunity at the desk is usually offered to a reporter who, besides having demonstrated the qualities of accuracy, good news judgment, wide general information, and a satisfactory literary skill, has also shown, by the way he has written and marked his copy and by the suggestions he may have made as to typographical treatment, that he has correct ideas as to the possibilities and limitations of the mechanical department. If, as a reporter, the young newspaper man has familiarized himself with the workings of the composing machines, if he has taken careful notice of just what can be conveniently done with the particular equipment installed in the plant in which he works, just what changes involve additional trouble and expense and how much, and if he knows by name and size the types and borders, both hand set and machine, available for banner heads, freak heads, boxes, emphasis and unusual typographic effects, he has a foundation for success as a copy-reader.

THE COPY-READER'S AMBITION. Few newspaper men look upon the position of copy-reader as a desirable post in which to spend all the years of one's working life. As an experience, however, it is extremely valuable, whether one expects to go back to reporting, reinforced by the new knowledge gained at the desk, or whether one expects to advance to executive positions. If one expects to go back to reporting and attain eminence as a news man or correspondent, he should take advantage of the regular and comparatively short hours the desk demands, to keep his hand in by writing in his spare time, turning out Sunday stories and features for sale at space rates, corresponding for other papers, and writing editorials, magazine articles, and perhaps books. If he does not do this—if it is his ambition to be not a writing man but an executive—he should make a careful study of the conditions under which the executives above him do their work. Just as he prepared himself when a reporter for promotion to the desk, so he should now once more study the job ahead and be ready for another promotion.

TEMPTATIONS OF THE COPY DESK. A position at the copy desk can be either the most valuable training school the profession of journalism offers or it can be the graveyard of professional ambition. It all depends upon the individual. In every profession, in law, in medicine, in engineering, in the arts, and even in business, it is necessary for the ambitious young man to exercise initiative, and to devote much of his spare time to professional study, to general reading, and to widening his contacts, if he is to attain any high degree of success. The same is true of journalism, but this is too often not understood by beginners in the profession. Both the reporter and the newspaper executive receive innumerable calls upon their personal initiative, and unending stimulus from their daily work and their outside contacts. But the copy desk man, on the other hand, can, unless he guards against it, sink into an attitude of satisfaction with his seven or eight hours' work, can become a hermit from society, can let his powers of initiative atrophy, can gradually drop his general reading, and adopt what is after all, when once its acquirements have been thoroughly mastered, a life of rather easy routine. The alternatives are either to keep up one's writing, or to prepare oneself for executive promotion.

SAVING TROUBLE IN THE COMPOSING ROOM. The copy-reader is, essentially, the intermediary between the writer, on the one hand, and the make-up editor and the printer on the other. To be efficient, he must know well the work both of the reporter and of the shop. This book deals only with the latter phase of his activities. His duty is to take the copy as the reporter leaves it and to send it into the shop in such shape that the printers will have no unnecessary difficulties to surmount, nor judgment to exercise, nor questions to ask, and the make-up editor will receive an attractive type unit that he can easily shorten if need be. The successful copy-reader, ripe for further promotion, is the one who not only makes it easy for the make-up editor to put together rapidly and without friction in the shop an attractive newspaper, but who understands the make-up editor's problems so well as to be called upon from time to time to help on the make-up floor, or to represent the make-up editor on errands to the mechanical department.

COMPOSING ROOM OPERATIONS. To be of any use on an errand into the composing room, the copy-reader must have a clear idea of how this department operates and where the various sorts of authority reside. For instance, later information by telephone or otherwise shows that some news item is radically incorrect, perhaps even containing a gross injustice or libel. In such case the instructions to the foreman must be peculiarly explicit. For instance: "Kill item under 2 head 'Atwood Scores Governor' sent up early marked 'Page 1.' " In the rush just before press time it is sometimes not safe to depend solely upon a note to the composing room. If the error is important the only sure way is actually to find the metal and throw it personally into the hell box or see it done, and in addition to make sure that the foreman, the copy-cutter, or the proof-reader knows about it and will not order it reset. The problem is to find both the type and the copy with the utmost expedition. The managing editor and make-up editors have many such errands on an infinite variety of emergencies, and copy-readers and even reporters on most papers get their share. The necessity of doing this at times should not be interpreted as a license to do it over trifles. The beginner in particular, must be cautioned not to make himself obnoxious to members of the force more experienced than himself.

Route of Copy. In a small shop, where there are not more than one or two machines, copy goes directly to the operator or passes through the hands of the composing room foreman. In a larger shop, as has been explained, there is a special functionary called the copy-cutter, who is in charge of the routing of copy and whose duty it is to know at any instant the exact location of every bit of copy and every piece of type matter. The time has come to learn his system in greater detail than was practicable in the first survey of the shop.

The copy-cutter is the first man on the mechanical side who sees the reporter's article. It comes to him together with the head that has been written for it by the copy-reader. He receives many other stories at the same time. It is his business to keep them from getting mixed and to turn completed and corrected galleys over to the make-up floor as rapidly as possible and in about the order in which he knows they will be needed over there. He skims through the bunch of copy he has just received. Any "rush stuff"? Ah, yes, here is an editorial: that must be set at once because the editorial page goes down first. The reporter's own story, too, perhaps is rush stuff: it evidently belongs on the woman's page and that, too, perhaps is an early page. So he goes at these two articles first. Because they will be wanted on the make-up floor almost at once, he cuts them into very short "takes" or sections.

The different operators come to the copy-cutter's desk and carry these takes separately, each to his own machine, so that several compositors are working simultaneously on a story. Each take receives a letter or a number indicating into which galley the completed type is to be assembled and a number or other mark showing whether it is the first, second or third take in the story. Story A, for instance, will be cut into takes called A1, A2, A3, and A4 (the last take including an "end mark"). Story B will be cut into B1, B2, and B3. Say the editorial is "slugged" for galley A and the reporter's story for galley B. Because the takes were short, the compositors get through with them quickly and bring the copy back almost instantly, together with the type, which they place in the correct galley on the dump in its correct order. Each compositor has inserted a slug at the top of his section carrying the key letter of the copy, and the take's serial number so the type not only gets into the right galley, but gets there with the takes in their correct order.

When the proof boy notes that a story is complete on the galley, and the end dash present, he pulls the proofs. The copy of each story is now rolled up together with the galley proof of the same story and both are sent to the proof room to be read. When the proof is read and returned to the copy-cutter he sends it to a machine to have those lines recast that contain errors. The new slugs are rolled in the proof and laid upon the appropriate galley on the bank and the printer assigned to the task removes the old lines and inserts the new, and the type is forwarded to the make-up floor. This is the usual newspaper practice.

In more careful work sometimes a second proof, a "revise," will be pulled, and the galley will await a second correction. On the other hand sometimes a make-up editor, in a hurry to complete a page, will send over to the bank and grab a galley before it is corrected; in that case the correction lines, rolled in their proof, will be sent on to the make-up floor and placed on the article for insertion there. Earlier in the day, before the rush hours began, the copy-cutter would have been likely to cut the articles into longer takes, sometimes giving a complete story to a single compositor. This lessens the amount of running around in the shop, but also results in a slower delivery of completed stories to the make-up floor.

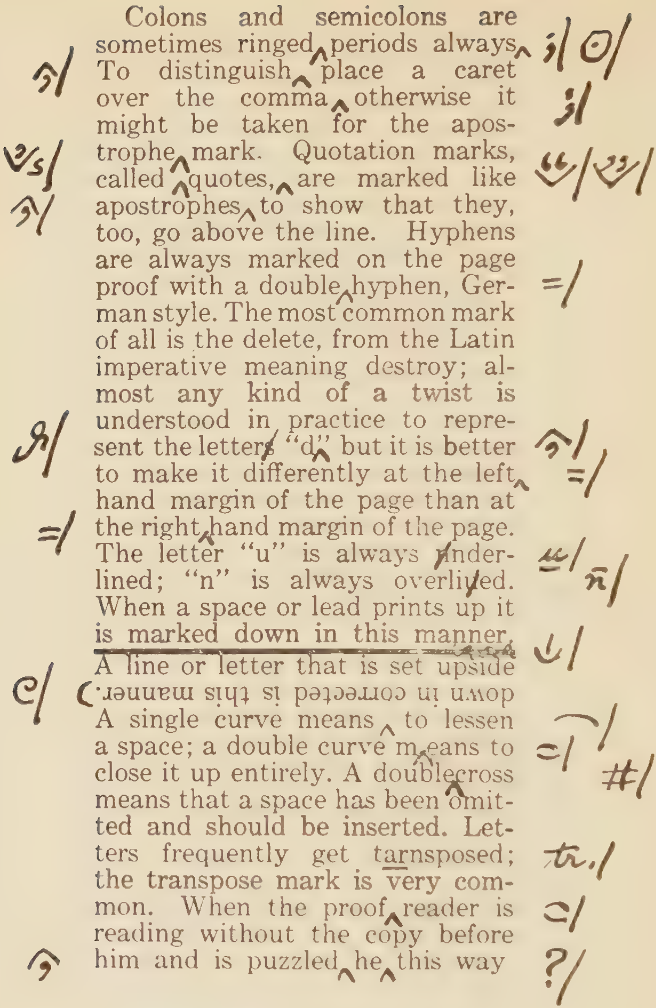
ROUTING OF THE PROOFS. So far, the emphasis has been placed upon the routing of the copy and of the type matter. The copy went from the copy desk to the make-up editor, to the copy-cutter, was taken to the machines by the operators and brought back to the proof-boy, who sent it thence to the proof room where it will be preserved for some weeks or months. The type matter originated on the machines, went to the dump, to the proof press, to the correction bank (where it waited until the corrections were made), thence to the make-up floor to be put into the page. The only proof mentioned so far originated at the proof press, went to the proof room with the copy, back to the copy-cutter, to the machines, to the bank (wrapped around the correction lines), then again to the copy-cutter's desk, where it is placed upon an appropriate hook for preservation. For indentification this proof will be called the proof-reader's proof, for it has been previously stated that in large offices several proofs are pulled simultaneously with this one.

The make-up editor, in particular, receives a complete set, and they are helpful to him in planning the make-up. He has already seen the copy and knows its general content, but the proofs give him a chance to measure the exact length of the stories and decide more definitely where he will place them when he begins to make the pages. Some make-up editors carry their batch of proofs with them to the make-up floor, marking off or throwing away the proofs as the type each proof represents is placed in its page. Other editors depend less on the proofs and work with the type in the galleys, trusting their memory more.

HANDLING EDITORIAL PROOFS. The men of the editorial side receiving proofs must handle them with discretion and in accordance with the customs of the office. They must not duplicate the work of the proof-reader. They must not send out proofs marked for the correction of trivial mistakes; it is fair enough to assume that these have been attended to in the proof room, and to send out numerous duplicate corrections would only cause confusion. Editorial proofs are marked and sent to the copy-cutter when (a) later developments require changes to be made in the story, or the head; (b) when it is decided to "kill" a story, or to hold it for a later edition, or give it some special display, in which case the message can be written on the margin and the proof will serve to identify the story in question; and (c) when the mistake is so egregious that no chances must be taken of its getting into the paper. Where the change is of vital importance it is advisable to go directly into the composing room and see personally that the correction is made; newspaper processes are so swift that it is not always safe to depend on the regular procedures to eliminate libelous matter and other enormities.

Locating Proofs and Copy. The first step in dealing with an egregious error is to make sure that it has not already been corrected in the regular way. A copy-reader who knows the routing system of the office can often locate the material quietly and inconspicuously at once, without bothering the copy-cutter, proof-reader, compositor, and make-up editor. In most cases the quickest way is to ask the copy-cutter. Quiet efficiency on an errand of this kind is greatly to the young man's advantage. If the story has not been set, he can find the copy and make the desired change. If it has been set but not corrected he can see that his change is incorporated in the proof-reader's proof. If his knowledge of the mistake came to him from his copy desk proof, he will know where to find the proof-reader's proof to see if the error was caught, and he will know that the type is either still on the correction bank, or on the make-up floor, or already in the page. In the latter case he consults the make-up editor, not the copy-cutter.

MARKING THE PROOFS. The proof-reader employs a neat and explicit set of conventional marks to indicate the corrections to be made on the proofs. Newspaper practice in the use of these differs from the system set forth in the text books and in the back of the dictionary in that on the newspaper a line is drawn from the error to the correction mark. The following passage gives the principal marks, those that a newspaper man needs to know, and at the same time shows how a newspaper proof should look:



Colons and semicolons are sometimes ringed periods always To distinguish place a caret over the comma otherwise it might be taken for the apostrophe mark. Quotation marks, called quotes, are marked like apostrophes to show that they, too, go above the line. Hyphens are always marked on the page proof with a double hyphen, German style. The most common mark of all is the delete, from the Latin imperative meaning destroy; almost any kind of a twist is understood in practice to represent the letters "d" but it is better to make it differently at the left hand margin of the page than at the right hand margin of the page. The letter "u" is always nnderlined; "n" is always overlived. When a space or lead prints up it is marked down in this manner. A line or letter that is set upside down in corrected is this manner. A single curve means to lessen a space; a double curve m eans to close it up entirely. A doublecross means that a space has been omitted and should be inserted. Letters frequently get tarnsposed; the transpose mark is very common. When the proof reader is reading without the copy before him and is puzzled he this way

Proof Showing
Proofreader's Marks

Colons and semicolons are sometimes ringed; periods always. To distinguish, place a caret over the comma; otherwise it might be taken for the apostrophe's mark. Quotation marks, called "quotes," are marked like apostrophes, to show that they, too, go above the line. Hyphens are always marked on the page-proof with a double-hyphen, German style. The most common mark of all is the delete, from the Latin imperative meaning destroy; almost any kind of a twist is understood in practice to represent the letter "d," but it is better to make it differently at the left-hand margin of the page than at the right-hand margin of the page. The letter "u" is always underlined; "n" is always overlined. When a space or lead prints up it is marked down in this manner. A line or letter that is set upside down is corrected in this manner. A single curve means to lessen a space; a double curve means to close it up entirely. A double cross means that a space has been omitted and should be inserted. Letters frequently get transposed; the transpose mark is very common. When the proofreader is reading without the copy before him and is puzzled, he queries this way.

PROOF AFTER
CORRECTIONS HAVE BEEN MADE

x/ A bad letter is marked with a
simple cross to call attention to
it; be sure it is not merely a fault
in inking. When a letter of a
w.f./ wrong font has crept in, it is also
sufficient to call attention to it;
the printer has sense enough to
know what it should be. but cap- B/ cap./
cap./ itals are indicated by a triple
underlining or else (equally ad-
δ/δ/ missible), by, their abbreviation.
s.c./ Small capitals are marked by a
double underlining, Italics by a ital./
b.f./ single, and bold face by a wavy
line. Abbreviations will do in
any case. Mispeled words are s/ l./
better written out in full in the
margin, rather than corrected by
e/ the use of carts. When the proof =/
reader marks out a passage and
then changes his mind after con-
sidering the matter ~~a second time~~ stet/
he uses the Latin word "stet,"
which means "let it stand." The #/
usual paragraph mark is an order
to start a new paragraph.

no ¶ When no new paragraph is de-
sired it is indicated this way. run in/
Or this.

[/ This means move the line
to the left.

]/ This means move it to the right.
If a dash is omitted or is of the $\frac{1}{m}$/
$\frac{1}{m}$/ wrong length the correct length
in picas is shown as the numer-
ator of a fraction.

PROOF SHOWING
PROOFREADER'S MARKS
(Continued)

A bad letter is marked with a simple cross to call attention to it; be sure it is not merely a fault in inking. When a letter of a wrong font has crept in, it is also sufficient to call attention to it; the printer has sense enough to know what it should be. But CAPITALS are indicated by a triple underlining or else (equally admissible) by their abbreviation. SMALL CAPITALS are marked by a double underlining, *Italics* by a single, and **bold face** by a wavy line. Abbreviations will do in any case. Misspelled words are better written out in full in the margin, rather than corrected by the use of carets. When the proofreader marks out a passage and then changes his mind after considering the matter a second time he uses the Latin word "stet," which means "let it stand."

The usual paragraph mark is an order to start a new paragraph. When no new paragraph is desired it is indicated this way. Or this.

This means move the line to the left.

This means move it to the right. If a dash is omitted—or is of the wrong length—the correct length in picas is shown as the numerator of a fraction.

PROOF AFTER
CORRECTIONS HAVE BEEN MADE
(Continued)

Discretion in Marking Proofs. In reading *copy* the copy-reader, in accordance with the customs of the profession, allows himself a large liberty in altering the reporter's story by improving its rhetoric, changing the paragraphing and punctuation, and trimming out verbiage. This is in some respects exceedingly bad training for the work of *proof*-reading. The young newspaper man should rigidly restrain himself from "copy-reading the proof." This is about the first serious mistake the neophyte makes in his relations with the mechanical department. The duty of the printers is to reproduce the copy; they willingly correct any errors *they themselves* have made but in the interests of efficiency the composing room foreman strenuously objects to having changes made on the proofs that should have been made on the copy in the first place. The copy-reader who requires too much work of this sort will probably lose his position.

The rule is to require corrections of clear violations of grammar, of spelling of names, and of facts misstated, but where it is a mere matter of slightly preferable rhetoric or of personal taste in punctuation, wording, or arrangement to let it go through without change, resolving to read the copy more carefully next time. In making editorial corrections in other places than the last line of the paragraph it is desirable, if it can be done conveniently, to leave the line about the same length as before. For instance, the reporter wrote, and the copy-reader duly passed, the line "W. S. Smith and J. R. Jones Jones were." The proof-reader would not change this; he has no means of knowing it is not correct. The copy-reader, however, who knows about both men will mark out the unnecessary "Jones" and to compensate for this loss of length will change "W" to "William." If he fails to do something of the kind several lines, instead of one, may have to be reset.

RINGED CORRECTIONS. Corrections other than those inserted by the proof-reader to bring the proof into accord with the copy are often marked with a ring around them; this indicates that they are "editorial" changes—not the compositor's fault. This has various uses in the discipline of the composing room; sometimes the operator is not required to make his own corrections unless there is a certain minimum of unringed corrections, comparatively "clean" proofs of this sort going to a special machine called the "ring machine." Ringing is also used when an already corrected proof goes back to the machine for further corrections inserted later. Ringed corrections are a reflection upon the copy-reader; unringed upon the printer. The distinction is therefore somewhat jealously guarded.

COMPOSING ROOM EFFICIENCY. Newspaper

composing rooms vary from extreme efficiency to confused and expensive inefficiency. It is in the interest of every man on the staff loyally to assist the mechanical superintendent and the composing room foreman in their effort to establish and maintain a system that will result in the best possible production at the lowest possible cost. The more money they can save, the more there will be for salary increases and for the production of a better paper. The aim is to perform the editorial duties in such a way that there shall be as few as possible "errands to the composing room." The copyreader should try to maintain a record of never having to go to the composing room to correct any error of his own, any that by additional care or foresight he might have obviated. And when an errand is necessary he should attempt, through his thorough knowledge of the system in use, to accomplish his purpose with the fewest possible questions and the least possible distraction of others from their work. The system varies greatly in different offices; of late years a tendency can perhaps be noticed to pull fewer proofs in the belief that too many are a cause not only of expense but of confusion; some large newspapers are now pulling only one editorial proof besides that for the make-up editor. And this single editorial proof is handled differently in different offices.

ASSIGNMENT

The copy-reader discovers that he has made a really serious mistake: he had used the name of J. S. Robert, an estimable banker of unblemished reputation, in place of J. F. Roberts, an employe of the same bank who has been accused of embezzlement. How shall he make absolutely sure of correction—

(a) after the takes have been distributed to the machines by the copy-cutter but before the composition is complete?

(b) after the first proofs have been pulled but while the type is still on the correction bank, and while the proofs and copy are in the proof room?

(c) after the type has gone to the floor for make-up?

(d) after the form is locked up but before it has gone to the stereotyping room?

(e) while the form is being stereotyped?

(f) while the form is running on the press?

To what functionary will he appeal in each case for authority and aid in making this correction, one that every newspaper man will recognize as absolutely necessary?

V

Understudying the Make-up

COPY-READER AND MAKE-UP. The regular editorial duties of the copy-reader are excellently described in other works.[1] In addition to performing these duties well, he has the opportunity to prepare himself for the work of make-up, through increasing his familiarity with typographic details. The proofs of his work which are usually sent to the copy desk for him to glance at and verify if he has time do not comprise his only opportunity. The first copies of the paper that come off the press also are frequently sent up for a rapid scrutiny on the editorial side, especially at the copy desk. Besides this, and most important of all, the copy-reader is in line to assist the make-up editor or even to take his place in emergencies.

The last mentioned opportunity usually goes to the copy-reader who has demonstrated some intelligent appreciation of printing processes, and especially the faculty of noticing typographic details. On some papers department editors—*i. e.*, reporters or sub-editors in charge of sports, society, markets, marine, automobiles, churches, "colyums," suburban, state news, etc.—go into the composing room and make up their own departments. The chance to substitute for any of these in an emergency is an opportunity to get experience in make-up that may come to any reporter or copy-reader at any time, and forms an additional reason for studying the operations of the composing room as a preparation for such a chance.

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[1] For example, Bastian, *Editing the Day's News.*

SCRUTINY OF TYPOGRAPHIC DETAILS. On the first papers off the press, as on the proofs, are many things the copy-reader can train himself to notice besides the ordinary matters of punctuation, spelling, and accurate following of copy. There are many details of make-up on which no help can be expected from the proof-reader.

Only constant effort, trained watchfulness, and a sustained interest in type forms on the part of those responsible for make-up will obviate irregularities and improprieties of leading, the omission of leads at the top of the column between the page rule and the first line of type, the incorrect use of dashes, paragraphs coming wrong at the top and bottom of columns, bad placing of subheads, awkward carry-overs, incorrect continuation lines, wrong page numbers, erroneous dating in the page title lines, incorrect page references in the index, badly balanced arrangement of the stories on the page, cuts poorly placed with reference to the accompanying stories, omitted legends under cuts, doublets (duplicated stories) in the paper, conflict or too close duplication between cut-captions and the heads over the stories, cut-captions in type too large or too small, incorrect capitalization in cap and lower case lines (all words over three letters long begin with capitals and all short words, too, unless they are articles, prepositions or conjunctions [1]), boxes not fitting at the corners, rules omitted, or double rules upside down between news and advertising, or between ads, rules cutting off banner heads from the stories to which they apply, or rules omitted that should cut off such heads from the stories to which they do not apply, heads over the wrong stories, follow stories separated from the main stories they should accompany, and stereotype plates trimmed too close at the edges or not sufficiently gouged out in the white spaces. The details that a make-up editor must watch are innumerable if his paper is to maintain the reputation of being well edited in the typographic sense.

The eye of a good make-up man becomes with practice almost miraculously quick to notice the points here enumerated. The layman usually does not see them at all, but does get a vaguely unfavorable impression from a paper in which they are not correctly handled. Some of these ineptitudes of make-up are worth consideration in greater detail.

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[1] Some papers also capitalize short prepositions, articles and conjunctions when they come at the beginning of a line.

WRONG LETTERS. In either hand-set or machine composition, an occasional letter from the wrong font will get into the composition. While it is the function of the proof-reader to catch and correct all such errors, it is not safe for the make-up editor to depend upon him absolutely, among other reasons because the proofs often come up too late for the corrections to be made in time for the edition immediately in hand. The make-up editor, assisted as he often is by the keen eye of the copy-reader, must catch such ineptitudes, especially in the large letters of headlines, cut captions, figures, and in especially conspicuous places in the paper and in the most important stories. He has not time to read all the proof meticulously himself, but he catches many such errors not only on the proofs, and in the first papers off the press but on the type itself.

Therefore his ambitious understudy, the copy-reader, should practice, at every opportunity, the art of "reading type." A printer usually reads type upside down from left to right. As the make-up editor usually stands at the opposite side of the chase from the printer, his understudy should learn to read type right side up from right to left. It is still better to learn to read it both ways. The ability to read type rapidly is invaluable to a make-up editor.

The type ready for the forms has usually become slightly soiled by the ink used in taking proofs. Late correction lines, however, and sometimes late rush stories, often go into the page without waiting for the proofs and therefore their uncorrected state can be readily detected by their comparative cleanness. The make-up editor should carefully read on the type all of these he can find time for because the printer in making one correction often introduces another worse error into the line. In doing so the make-up editor should read a short way into the line preceding and into the line following to make sure that the correction line is inserted in the right place. A few slugs are often dropped and mixed up or "pied." In this case also it is necessary for the make-up editor to know how to read the type and see that the slugs are correctly rearranged.

FLEXIBILITY THROUGH LEADING. Many of the apparently arbitrary rules of newswriting and copy editing learned by rote by the tyro in journalism are devised for the purpose of making the story flexible as to its length. The practice of putting the most important news at the beginning of the story and tapering down to comparative non-essentials enables the make-up editor to cut a few inches off the end without much injuring the article. The practice of avoiding over-long paragraphs facilitates the same process—otherwise a story could not be "cut" at the make-up table except where a sentence accidentally happened to close at the end of a line.

Sub-heads also add enormously and very usefully to the flexibility of stories. If they are plentiful, alternate sub-heads can be thrown out to shorten the story, or, occasionally, all of the sub-heads can be eliminated. They help in lengthening a story also, for leads can be slipped in just above and below sub-heads and the reader will not detect the irregularity of the leading. Leads are narrow strips less than type-high, usually two points thick, which can be inserted between slugs. By their use a column of type can always be lengthened at least an inch and in some circumstances much more. Leads are first placed between the several stories in the column. If more are needed they are inserted above and below the subheads in the individual stories. When a head is not balanced against another head of the same kind on the page, a good deal of lead can be inserted between the lines and decks of the head. Leads can be put in between paragraphs, or they can be placed between the lines, beginning at the top and running down into the story as far as necessary to give the column the desired length. The order in which these devices are to be resorted to differs on different papers but the sequence here given is a usual practice. Some printers disapprove of leading between paragraphs on the theory that there is too much white space at that point already, but others utilize this method by preference before resorting to interlinear leading. The copy-reader should train his eye to judge when a column is too much leaded, that is, to detect the point at which the appearance of the page suffers by the process.

OTHER ELEMENTS OF FLEXIBILITY. As the copy-reader familiarizes himself with the duties of the make-up editor, he will come to realize the extreme need of flexibility and the utility of supplying the make-up editor from the desk with plenty of good "short stuff": little stories half an inch, an inch, and two inches long. If there are plenty of these available an attractive page is always possible without excess of leading. The good reporter, also, keeps this in mind. Constant pressure on the reporters by the executive is necessary to keep them from neglecting to turn in short items. One and two line fillers are also a very great convenience. They include many varieties of matter: little jokes, odd scientific facts, fragments of statistics, and even sometimes the well known "Subscribe for the Journal" and "Use Sentinel Want

Ads." Fillers should be largely undated "time copy" usable tomorrow if not needed today. Many papers also introduce an element of flexibility into the head schedule. They use a head of three or four decks, and also, for less important stories, a head of one or two decks set in the same type as the upper decks of the longer head. In this case, wherever the importance of the story will at all justify it, the copy-reader should write the longer head, leaving to the make-up editor the privilege of readily shortening the story by dropping out a deck or two. For this reason an upper deck should contain no statement which will be incorrect or unintelligible if the decks beneath it are removed. On some papers two heads differing in size are written and set for the larger stories, leaving the make-up editor to take his choice or perhaps to use one in an early edition and the other in a later.

DASHES. While the layman's eye would seldom detect the fact, except subconsciously, many papers use a considerable variety of dashes. Papers have been known to have different dashes for the ending of telegraph and local stories, others for editorials, still others between the decks of the heads and between main and follow stories. While the present tendency is toward simplicity, the copy-reader will notice that scarcely any paper uses fewer than two different dashes—the long or "end" dash, and the short, "jim," "dinky," or

2-em dash. These are today generally mere straight horizontal lines, but even at that they have a tendency to get in wrong. For one thing, they are not always on the exact center of the slug, but above or below the center, and if they are upside down, they detract subtly from the appearance of the paper by printing too high or too low. Then end dashes get in where jim dashes belong; two dashes get together; a dash is left under a story at the bottom of a column or against the rule that divides news from advertising—in neither of which places is it customary to use a dash. They creep in under cuts, at the top of columns, under boxes, and in various other incorrect places. They also get left out.

A rather common dash is a two-line design, consisting of two lines, a heavy line paralleled by a light line. In this case the heavy line should always be toward the top: it has a strong tendency to get in upside down. At this point it may be well to explain the extreme importance of the copyreader's—and reporter's, too—always putting the "end mark" at the conclusion of the story. When the printer sees this he automatically inserts an end dash, and this is a notice to all who may see the type in the galley that the story is complete and ready to be proofed and put into the paper. For lack of this end mark many an important story has lain unproofed in the galley on the dump, apparently incomplete, and has missed editions in which it might easily have been included.

Rules. While a "lead" is a strip of lead or brass less than type high so that it does not print, a rule is a strip of lead or brass type high whose edge prints a line on the paper. The line left by the printing edge may be thick or thin, straight, waved, or broken. The wider rules with the more complicated designs on the printing edge are principally used for borders around advertisements and boxes, and are called by that name, "borders." The simplest rule is the "column rule," the vertical line the full length of the page which separates one column from another. The reporter or copy-reader should ascertain the thickness of the column rule used on his particular paper. If it is a nonpareil (6-point) as it usually is, then this must be taken into consideration in marking cuts for the engraver. If the single column is 13 ems (pica), then a full two-column cut must be marked not 26 picas, but 26½ picas, a three-column cut not 39 picas but 40 picas, etc.

Horizontal rules usually run between all advertisements. These rules are inserted in addition to any borders the advertisements themselves may carry. Printers have a tendency to leave these out, and this error should be watched for. Some papers use the same rule for this purpose and for marking the horizontal line between news and advertising; some use a heavier rule for the latter purpose. Where two kinds are used, the wrong rule is very likely to creep into place, and this should be carefully watched in the make-up process and in the critical survey at the desk.

Rules used to separate news and ads are called "cut-off rules," and the same name is given the rules used to separate news stories from each other (except single column stories, where the end dash suffices) and from overlapping heads. Cut-off rules are used to separate heads that are wider than the story from other stories coming under the head but to which the head does not apply. They are placed under cuts, and over cuts when they are "sunk"—placed away from the top of the column, their usual place. They are also used under boxes that contain complete stories but not under boxes that form parts of stories that continue beneath them, under stories that are doubled up and squared off under a head several columns wide, sometimes under continuation lines ("Continued on page 7") that are placed away from the bottom of a column, on some papers over continuation lines, and on some few papers in connection with the continuation or "carry-over" or "jump" portion of a story ("Continued from page 1"). The ways in which rules can be misplaced are innumerable, and they need watching. Long rules, and on the first page a pair of them, run across the top of the page, separating the date, name of paper and page number from the text. These are often double rules (a thick line paralleled by a thin one) and they should be noticed on make-up to see that they are not upside down. The heavy line belongs above the thin line. This type of rule is often used for cut-off rules and for separating advertisements, and here, too, it needs close watching. When horizontal rules extend across more than one column they have a tendency to become bent if the justification (evening up in length) between the type matter in the columns is imperfect. Rules used in borders about boxes, if not carefully measured, will make imperfect corners. One of the prime marks of an executive competent to supervise printing is the habit of glancing carefully at all corners before giving approval.

ROUTINE VERIFICATIONS. The first step in make-up and the first also in going over the first papers off the press, should be to verify the dates, page numbers, and cross references. Yesterday's date sometimes creeps into the paper at the top of the page, and the compositor sometimes supplies all the pages with such monstrosities as "September 31." A certain newspaper made the nineteenth century a day too long by issuing a paper dated "December 32, 1900." The volume and number, once wrong, are likely to continue wrong for weeks, causing much ultimate confusion. Page numbers are sometimes wrong. These can be gouged off on the stereotype plate, and the pages run without a number until the correction can be made in the next edition. All continuation lines should be checked to see if the ending of a story marked "Continued on page 6" is really found on that page. Where an index is used all page numbers contained in it should be carefully checked.

NICETIES OF MAKE-UP. There are many refinements of make-up that are well worth observing, but whose occasional violation does not warrant stopping the press or even making over the page in the next edition. Where a story is continued from one column over into another, any sub-head within an inch or so of the break should be removed. A mild attempt should be made not to break the story from one column to another between paragraphs, nor within one line of a paragraph ending. A story should be shortened and kept within its own column rather than carried over if the proposed carry-over is only an inch or two long, but the rule of reason should be applied here, and a story not "butchered" for the sake of typographic nicety.

The practice of some papers of starting an excessive number of stories on the front page and permitting a large number of carry-overs (especially of short carry-overs less than four or five inches long) cannot be approved by any lover of good printing, nor by any newspaper man solicitious for the convenience of the reader, but if the controlling executives desire that sort of make-up, as many do, then subordinates must follow the style of the paper. Headlines containing accidental similarities of expression in large type should not be placed close together.

When the paper is more or less departmentalized care should be taken to place every story if possible on a page containing matter somewhat congenial to it in subject matter, and yet the make-up editor must ever be on his guard to recognize good front page material and not let it be buried in the departmental pages. Department editors, particularly, are often more keen to enrich their own departments than to see their matter on the front pages. They must be watched.

BREAKING TO THE NEXT COLUMN. One practice that cannot be approved except in extreme emergencies is that of breaking an article from the bottom of one column to a position near the bottom of the next under a cut-off rule. On small country papers this is frequently done and there is indeed some excuse for it where the columns are few and the choice of matter very limited. It should be observed, however, that those papers which are most carefully edited typographically do not permit an article to be broken from the bottom of one column to a place low down under a cut-off rule in the next column. It should be broken to the top of the next column unless that space is occupied by a box or a cut, in which case the article can be appropriately broken under that unit, separated from it by a cut-off rule if the box or cut relates to different matter, and without a cut-off rule if it relates to the same matter.

CORRECTIONS ON THE COMPLETED PAGE. While the survey of the first papers off the press furnishes the best possible opportunity for the beginner to test his critical knowledge of the niceties of make-up, not all the errors that he notices will be corrected. The "first papers" that come up are not proofs; the press room does not pull them and then stop operations to await the verdict; while the make-up editor and the copy-readers are glancing over them the building is rumbling with the noise of the presses which are grinding out papers at the rate of thousands an hour.

According to the kind of error detected at this late time several procedures are indicated: (a) about once in a lifetime an error, a monstrous accidental libel, a violation of law, or some mistake of the first order will be discovered which will justify stopping the presses, recalling all the printed papers from the circulation department and destroying them; (b) more frequently, but not very often, the mistake will justify the immediate stoppage of the press until a new plate can be sent down for the page containing the error; (c) still more frequently it will be worth while to change the page and send down the plate as soon as possible, but to let the press print erroneous papers until the new plate is ready; (d) almost daily errors are detected which are worth correcting for the next edition but which would not justify making over the page until the current edition is run off. Good judgment is required to determine into which of these classes a given error falls. One quick method of hiding an error is sometimes employed; to "mash the type." For instance, a single word, by typographical error, has been changed into a similar word which is heinously obscene. The press can be stopped at once, and the pressman can mash the offending word so that the reader will see only a blur or a white space. The press can then continue to run until the corrected page plate can be prepared and sent down. Wrong dates and page numbers are sometimes shaved off the plate on the press in a similar manner.

ASSIGNMENT

Examine a considerable number of newspaper pages for ineptitudes of make-up, marking each with a lead pencil and suggesting the reasonable alternative. Collect samples of all the sorts of errors mentioned in this chapter.

The Make-up Editor

VI

The Use of Type in Masses

More General Considerations. The primary duty of the make-up editors is to carry out as skillfully as may be the ideas of typographic arrangement prescribed for the paper by the managing editor, the editors, and the owners. This is no small task in itself; it involves not only great watchfulness of details and technical skill to find the correct and least bothersome solutions to a thousand little problems, all of which must be settled instantaneously without delaying the printers, but, more than that, requires a sensitive ability to grasp what is the appearance that will best express the typographic ideals of his own particular office. Every paper has a personality—it is different from every other paper—and that personality must be truly expressed every day, but each day in a somewhat different and original way. Just what is wanted cannot be well and instinctively understood unless the make-up editor studies the problems of the managing editor and his ultimate purposes.

TRANSLATING IDEAS INTO TYPE. The editor-in-chief and the proprietors of the paper think in terms of the popular psychology of the community; they analyze this and determine what qualities are called for if the paper is to achieve the kind of success they envision for it. Their conclusions are not reduced to styles and sizes of type; they are rather in terms of enterprise, force, human interest, variety, vivacity, directness, originality, emphasis, boldness, mingled in varying proportions with sanity, reasonableness, good taste, balance, traditionalism. One cannot have all these in extreme degree; they are often warring qualities. Emphasis, carried to the extreme, wars against a true sense of balance; too much variety may overstep the limits of the tradition of the paper; human interest too sentimentally conceived often violates good taste; boldness and enterprise too crudely expressed will sometimes destroy a valued reputation for sanity and reasonableness.

On the other hand, some of the milder, more sophisticated qualities if carried too far in a community schooled in hectic excitement may fail to satisfy the public idea of a strong, vigorous, interesting paper. All of these qualities or any desired combination of them, can, of course, be expressed in the writing, and in the selection of material, but the immediate point is that they can also be impressed upon the public through the skillful use of the right typographic devices. It is the duty of the managing editor to see that the paper is given the type dress that will convey the desired impression of the paper's character. He takes an abstract idea and translates it into type forms. It should be the make-up editor's ambition and pleasure to study how this is done.

EXPRESSION THROUGH TYPE. Let us take a few examples. The underlying idea of the *Christian Science Monitor* is not to issue a paper in a certain combination of type forms. The idea is to produce a journal characterized by sanity, responsibility, unexcitement, constructiveness, good taste. An examination of almost any issue will demonstrate how skillfully its managing editors have carried out this idea. A different sort of paper, the Denver *Post,* wished to crash into the controversies of the street as a force, as a factor in action rather than in philosophic thought. Placing the two papers side by side, an observer totally ignorant of the English language could scarcely fail to detect from the type alone something of their varying characters and ideals. "All the news that's fit to print," is the motto of the New York *Times,* ably lived up to for a quarter of a century. Its very type has the air of soberly, efficiently going about that particular business and leaving the vaudeville phases of journalism to others. But when Mr. Pulitzer took over the New York *World* he determined never to be satisfied with the mere telling of news. Since the first issue in 1883 the *World* has carried at its "mast head," the top of the first editorial column, the following analysis of the paper's ideal:

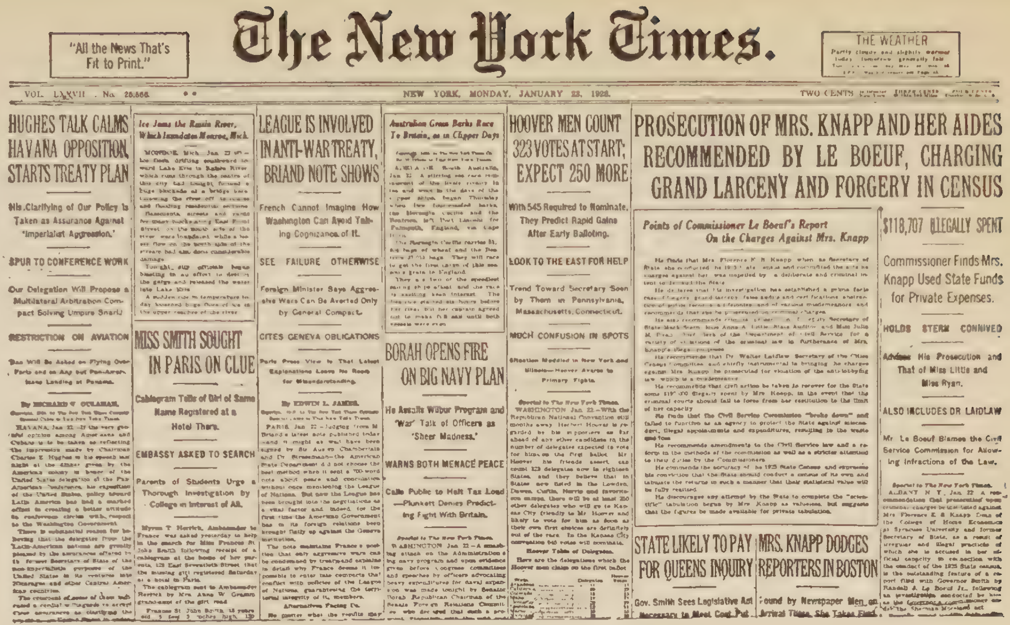
> An institution that should always fight for progress and reform, never tolerate injustice or corruption, always fight demagogues of all parties, never belong to any party, always oppose privileged classes and public plunderers, never lack sympathy with the poor, always remain devoted to the public welfare, never be satisfied with merely printing news, always be drastically independent, never be afraid to attack wrong, whether by predatory plutocracy or predatory poverty.

The typography of the *World* is splendidly adapted to a fighting, crusading newpaper, whose idea from the start was to strike blows that should tell, to arouse the public to action. A great home newspaper, the Chicago *Daily News*, well expresses its character in its type dress. It may be contrasted with the Hearst papers, with their emphatic, excitement-breeding appearance, well adapted to street sales and to an appeal to an extremely varied audience.

STYLE IN MAKE-UP. While every paper has its own typographic ideal, that ideal is a norm of appearance that is never completely attained, but which is day by day approximated in diverse ways. As this is not an ideal of monotony, but one informed rather with a certain desire for vivacious variety, its elements and limitations are often difficult to grasp. The New York *World* is never twice the same in appearance, yet it never approaches the dress of the *Christian Science Monitor*, nor with all their daily variations could the Denver *Post* and the Chicago *Daily News* be mistaken for each other. This is not a mere matter of the kind and size of type with which each paper has equipped itself, but is attained largely through certain ideals of arrangement tacitly understood by the make-up editors and the copy-readers. It is the task of the make-up editor to gain as soon as he can the sense of just what appearance the executives in his office are trying to give the paper and to study the technique of interpreting their attitude in type. Day by day as the paper comes up from the presses he should test his judgment as to the degree in which the make-up has been a success—it is never completely so—and try to detect the ways in which it could have been improved by greater foresight and ingenuity. While ideals of make-up are almost as numerous and varied as the papers themselves, several main lines of tradition may be detected.

CONSERVATIVE MAKE-UP. Conservative make-up usually includes a sparing use of type that is over-large or over-black, a tendency to restrict heads to one column in width, to use comparatively modest type in cut captions, and to place the large, black heads only in alternate columns, leaving the intervening columns light in color, especially at the top. While "conservative" make-up should not be confused with conservatism in politics or any lack of fighting quality in the handling of news, still the managerial temperament that deprecates evidence of puerile excitement in one field is likely to manifest itself similarly in others. Not always; the New York *Evening Post* under the Villard editorship and the Kansas City *Star* under Nelson, for instance, required much more subtle analysis. They were conservative in make-up but decidedly not conservative in some other respects. Yet "conservative paper," a highly ambiguous expression, does, after all, represent a conception with which most citizens are familiar.

Besides its typographic manifestations such a paper's dislike of blatancy is likely to be expressed by a disinclination on the part of the copy-readers



"All the News That's Fit to Print."

The New York Times.

THE WEATHER

VOL. LXXVII . No. 25,566.

NEW YORK, MONDAY, JANUARY 23, 1928.

TWO CENTS

HUGHES TALK CALMS HAVANA OPPOSITION, STARTS TREATY PLAN

His Clarifying of Our Policy Is Taken as Assurance Against 'Imperialist Aggression.'

SPUR TO CONFERENCE WORK

Our Delegation Will Propose a Multilateral Arbitration Compact Solving Umpire Snarl.

RESTRICTION ON AVIATION

By RICHARD V. OULAHAN.

Ice Jams the Raisin River, Which Inundates Monroe, Mich.

MISS SMITH SOUGHT IN PARIS ON CLUE

Cablegram Tells of Girl of Same Name Registered at a Hotel There.

EMBASSY ASKED TO SEARCH

Parents of Students Urge a Thorough Investigation by College in Interest of All.

LEAGUE IS INVOLVED IN ANTI-WAR TREATY, BRIAND NOTE SHOWS

French Cannot Imagine How Washington Can Avoid Taking Cognizance of It.

SEE FAILURE OTHERWISE

Foreign Minister Says Aggressive Wars Can Be Averted Only by General Compact.

CITES GENEVA OBLIGATIONS

By EDWIN L. JAMES.

Australian Grain Barks Race To Britain, as in Clipper Days

BORAH OPENS FIRE ON BIG NAVY PLAN

He Assails Wilbur Program and 'War' Talk of Officers as 'Sheer Madness.'

WARNS BOTH MENACE PEACE

Calls Public to Halt Tax Load —Plunkett Denies Predicting Fight With Britain.

HOOVER MEN COUNT 323 VOTES AT START; EXPECT 250 MORE

With 545 Required to Nominate, They Predict Rapid Gains After Early Balloting.

LOOK TO THE EAST FOR HELP

Trend Toward Secretary Seen by Them in Pennsylvania, Massachusetts, Connecticut.

MUCH CONFUSION IN SPOTS

PROSECUTION OF MRS. KNAPP AND HER AIDES RECOMMENDED BY LE BOEUF, CHARGING GRAND LARCENY AND FORGERY IN CENSUS

Points of Commissioner Le Boeuf's Report On the Charges Against Mrs. Knapp

STATE LIKELY TO PAY FOR QUEENS INQUIRY

Gov. Smith Sees Legislative Act Necessary to Meet Cost

MRS. KNAPP DODGES REPORTERS IN BOSTON

Found by Newspaper Men on Arrival There, She Takes Flight.

$118,707 ILLEGALLY SPENT

Commissioner Finds Mrs. Knapp Used State Funds for Private Expenses.

HOLDS STERN CONNIVED

Advises His Prosecution and That of Miss Little and Miss Ryan.

ALSO INCLUDES DR LAIDLAW

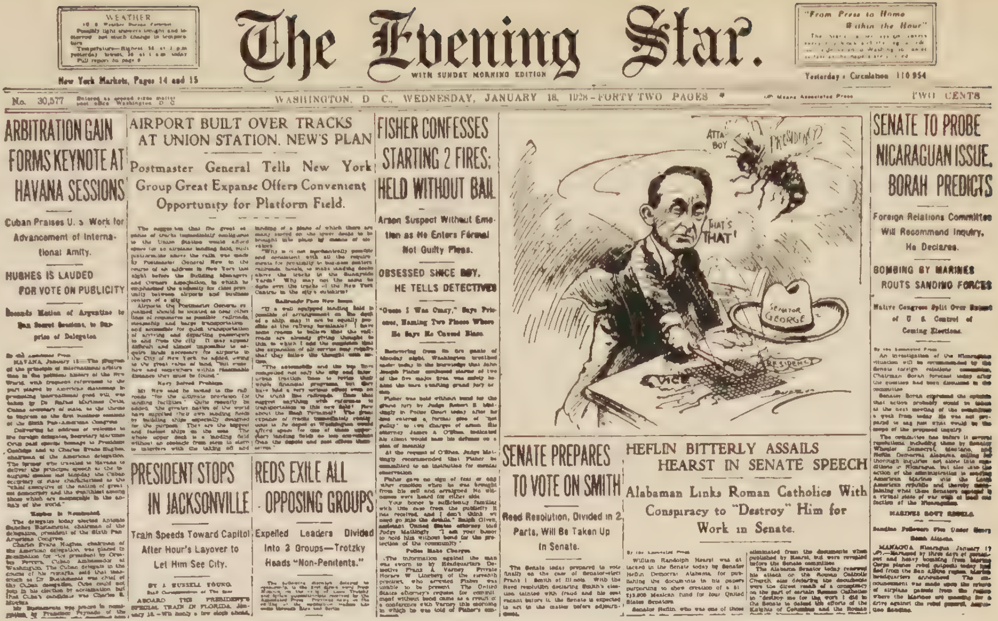
Mr. Le Boeuf Blames the Civil Service Commission for Allowing Infractions of the Law.

CONSERVATIVE MAKE-UP

Important stories in alternate columns. Emphasis obtained by liberal white space surrounding heads. Exceptionally important stories played in corners. Sometimes an eight-column banner is used.

to begin heads and sometimes even decks with subject-less verbs; by taboos upon "journalese" English—"probes," "lures," "love-nests," "flappers," "tots," "babes," "affinities," "bans," "bars," "flays," "bares," "looms"; the tendency to include the use of "Mr." in the style book; and, in general, the manifestation of only that degree of excitement about the news which might characterize an educated, sophisticated reader. Such papers are directed to home circulation rather than street sales, and attract readers of the better established social classes. Sometimes a paper will give a conservative appearance to its home editions quite different from the dress affected for the editions supplied to the newsboys for street sale.

SENSATIONAL MAKE-UP. A paper appealing to the less educated classes or thriving largely through street sales is driven by competition to a typographic form quite different from that described as conservative. From the conservative point of view the best news is an event with wide ramifications, one that will have an unending chain of after-effects impinging as time goes on upon a great number of persons and interests. Such news may be quite unsensational: the exact terms of a document to which some key person has at last affixed a more or less expected signature. Only the thoughtful person in a thoughtful



The Evening Star.

WITH SUNDAY MORNING EDITION

New York Markets, Pages 14 and 15

Yesterday's Circulation 110,954

No. 30,577

WASHINGTON, D. C., WEDNESDAY, JANUARY 18, 1928—FORTY TWO PAGES

TWO CENTS

ARBITRATION GAIN FORMS KEYNOTE AT HAVANA SESSIONS

Cuban Praises U. S. Work for Advancement of International Amity.

HUGHES IS LAUDED FOR VOTE ON PUBLICITY

AIRPORT BUILT OVER TRACKS AT UNION STATION, NEW'S PLAN

Postmaster General Tells New York Group Great Expanse Offers Convenient Opportunity for Platform Field.

FISHER CONFESSES STARTING 2 FIRES; HELD WITHOUT BAIL

Arson Suspect Without Emotion as He Enters Formal Not Guilty Plea.

OBSESSED SINCE BOY, HE TELLS DETECTIVES

SENATE TO PROBE NICARAGUAN ISSUE, BORAH PREDICTS

Foreign Relations Committee Will Recommend Inquiry, He Declares.

BOMBING BY MARINES ROUTS SANDINO FORCES

PRESIDENT STOPS IN JACKSONVILLE

Train Speeds Toward Capitol After Hour's Layover to Let Him See City.

REDS EXILE ALL OPPOSING GROUPS

Expelled Leaders Divided Into 3 Groups—Trotzky Heads "Non-Penitents."

SENATE PREPARES TO VOTE ON SMITH

Reed Resolution, Divided in 2 Parts, Will Be Taken Up in Senate.

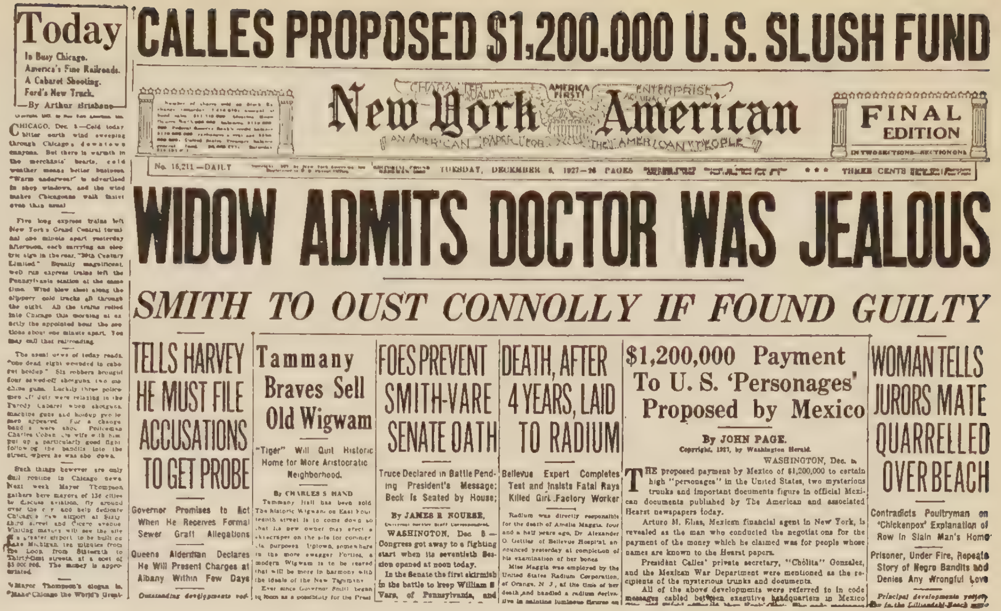
HEFLIN BITTERLY ASSAILS HEARST IN SENATE SPEECH

Alabaman Links Roman Catholics With Conspiracy to "Destroy" Him for Work in Senate.

COMPROMISE MAKE-UP

Very flexible. Can exhibit extreme conservatism on a day of dull news and the opposite extreme when big events occur. A banner can be inserted, or a corner head several columns wide. In very general use at present mood appreciates the full effect of such news, and often he reads it with the feeling that it is an extremely necessary bit of information; he studies it with a sense of his economic and other responsibilities but gets no thrill and very little pleasure from the operation. From the "sensational" point of view, the "best" news is something quite different. It is the story that contains surprise or drama or arouses emotions. It is the only kind of news that has great appeal to the thoughtless, the property-less, or those not oppressed by responsibilities. Its value is a plot-value; it is a true event that would still be readable if it were fiction. Therefore, the sensational make-up is planned to bring out fiction values: emotions, suspense, surprise, character reactions, horror, hate, suspicion, gloating in victory, pity, hero worship, contempt. Among the most effective of these sensational values are satisfaction of thwarted sexual curiosities and flattery of the reader.

TECHNIQUE OF SENSATIONAL MAKE-UP. The key to successful sensational make-up is emphasis. The attempt is to see how much emphasis can be crowded into the limited space of the page. As emphasis depends upon contrast, this is not easy. The conservative paper gets contrast, in most cases, by contrasting its important, heavily headed stories against light, unemphasized alternate columns. The sensational newspaper would like to



CALLES PROPOSED $1,200.000 U.S. SLUSH FUND

New York American

FINAL EDITION

No. 16,211—DAILY TUESDAY, DECEMBER 6, 1927—26 PAGES THREE CENTS

WIDOW ADMITS DOCTOR WAS JEALOUS

SMITH TO OUST CONNOLLY IF FOUND GUILTY

Today

In Busy Chicago.
America's Fine Railroads.
A Cabaret Shooting.
Ford's New Truck.

—By Arthur Brisbane

CHICAGO, Dec. 5—Cold today, bitter north wind sweeping through Chicago's downtown canyons. But there is warmth in the merchants' hearts, cold weather means better business. "Warm underwear" is advertised in shop windows, and the wind makes Chicagoans walk faster even than usual.

TELLS HARVEY HE MUST FILE ACCUSATIONS TO GET PROBE

Governor Promises to Act When He Receives Formal Sewer Graft Allegations

Queens Alderman Declares He Will Present Charges at Albany Within Few Days

Tammany Braves Sell Old Wigwam

"Tiger" Will Quit Historic Home for More Aristocratic Neighborhood.

By CHARLES S. HAND

Tammany Hall has been sold. The historic Wigwam on East Fourteenth street is to come down so that its new owner may erect a skyscraper on the site for commercial purposes. Uptown, somewhere in the more swagger Forties, a modern Wigwam is to be reared that will be more in harmony with the ideals of the New Tammany.

Ever since Governor Smith began to loom as a possibility for the Presi-

FOES PREVENT SMITH-VARE SENATE OATH

Truce Declared in Battle Pending President's Message; Beck Is Seated by House;

By JAMES R. NOURSE,
Universal Service Staff Correspondent.

WASHINGTON, Dec. 5.—Congress got away to a fighting start when its seventieth Session opened at noon today.

In the Senate the first skirmish in the battle to keep William S. Vare, of Pennsylvania, and

DEATH, AFTER 4 YEARS, LAID TO RADIUM

Bellevue Expert Completes Test and Insists Fatal Rays Killed Girl Factory Worker

Radium was directly responsible for the death of Amelia Maggia four and a half years ago, Dr. Alexander O. Gettler of Bellevue Hospital announced yesterday at completion of his examination of her bones.

Miss Maggia was employed by the United States Radium Corporation, of Orange, N. J., at the time of her death and handled a radium derivative in painting luminous figures on

$1,200,000 Payment To U. S. 'Personages' Proposed by Mexico

By JOHN PAGE.
Copyright, 1927, by Washington Herald.

WASHINGTON, Dec. 5.

THE proposed payment by Mexico of $1,200,000 to certain high "personages" in the United States, two mysterious trunks and important documents figure in official Mexican documents published by The American and associated Hearst newspapers today.

Arturo M. Elias, Mexican financial agent in New York, is revealed as the man who conducted the negotiations for the payment of the money which he claimed was for people whose names are known to the Hearst papers.

President Calles' private secretary, "Chólita" Gonzalez, and the Mexican War Department were mentioned as the recipients of the mysterious trunks and documents.

All of the above developments were referred to in code messages cabled between executive headquarters in Mexico

WOMAN TELLS JURORS MATE QUARRELLED OVER BEACH

Contradicts Poultryman on 'Chickenpox' Explanation of Row in Slain Man's Home

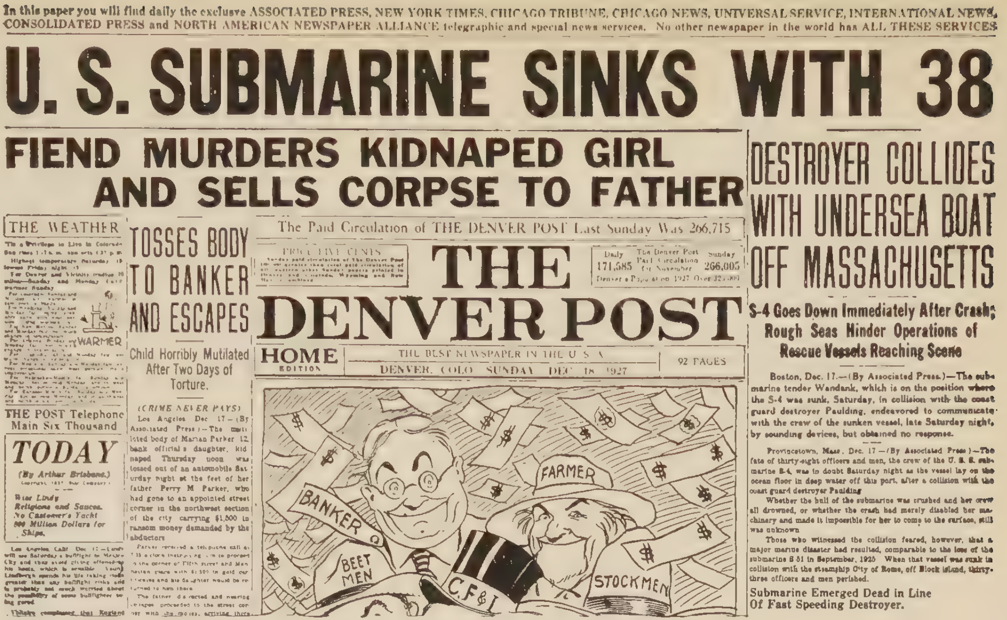
Prisoner, Under Fire, Repeats Story of Negro Bandits and Denies Any Wrongful Love

Typical Hearst Make-up

Stimulates street sales. Creates a tendency to overplay small items on dull days, and to that extent dulls the public's discrimination as to what is really important and what is trivial. A make-up that appears to satisfy an enormous reading public.

use all its columns for emphatic stories but realizes that in a row of emphatic heads, all the same typographically, each would destroy the emphasis of its neighbors. Therefore, a head schedule is devised by which the alternate columns can be filled with smaller, but still black and emphatic heads, by setting them in italics instead of roman and perhaps in caps and lower case instead of in caps, by introducing a plenitude of pictures, by using a variety of boxes, often with quite heavy borders, by resorting frequently to black-face type and narrow measure in the text, and by crossing the page itself with large banner heads. It is difficult to do this and still retain the respect of sound critics of typography; most sensational papers violate all rules of good typographic balance and harmony, and yet some exceedingly clever work has been done by skilled make-up editors in producing pages that are highly emphatic without being despicable typographically.

Compromise Make-up. Most American editors, being men of sophistication and balance themselves, are unwilling to sacrifice entirely the sanity and sense of proportion which are best expressed by the conservative make-up and the attitude toward news which it expresses. On the other hand, economic forces are all against a journalism conceived of as a service to a small class of refined and sophisticated readers. Most newspaper



In this paper you will find daily the exclusive ASSOCIATED PRESS, NEW YORK TIMES, CHICAGO TRIBUNE, CHICAGO NEWS, UNIVERSAL SERVICE, INTERNATIONAL NEWS, CONSOLIDATED PRESS and NORTH AMERICAN NEWSPAPER ALLIANCE telegraphic and special news services. No other newspaper in the world has ALL THESE SERVICES

U. S. SUBMARINE SINKS WITH 38

FIEND MURDERS KIDNAPED GIRL AND SELLS CORPSE TO FATHER

The Paid Circulation of THE DENVER POST Last Sunday Was 266,715

PRICE FIVE CENTS

THE DENVER POST

Daily 171,585 The Denver Post Paid Circulation for November Sunday 266,005

HOME EDITION

THE BEST NEWSPAPER IN THE U. S. A.

DENVER, COLO. SUNDAY, DEC. 18, 1927

92 PAGES

THE WEATHER

WARMER

THE POST Telephone Main Six Thousand

TODAY

(By Arthur Brisbane.)

Wise Lindy

Religions and Sauces.

No Customer's Yacht

800 Million Dollars for Ships.

Los Angeles, Calif. Dec. 17.—Lindy will see Saturday a bullfight in Mexico City and then avoid giving offense to his hosts, which is sensible. Young Lindbergh spends his life taking risks greater than any bullfight risks and is probably not much worried about the possibility of some bullfighter being gored.

TOSSES BODY TO BANKER AND ESCAPES

Child Horribly Mutilated After Two Days of Torture.

(CRIME NEVER PAYS)

Los Angeles, Dec. 17.—(By Associated Press.)—The mutilated body of Marian Parker, 12, bank official's daughter, kidnaped Thursday noon, was tossed out of an automobile Saturday night at the feet of her father, Perry M. Parker, who had gone to an appointed street corner in the northwest section of the city carrying $1,500 in ransom money demanded by the abductors.

Parker received a telephone call at 7:35 o'clock instructing him to proceed to the corner of Fifth street and Manhattan place with $1,500 in gold certificates and his daughter would be returned to him there.

The father, distracted and nearing collapse, proceeded to the street corner with the money, arriving there

DESTROYER COLLIDES WITH UNDERSEA BOAT OFF MASSACHUSETTS

S-4 Goes Down Immediately After Crash; Rough Seas Hinder Operations of Rescue Vessels Reaching Scene

Boston, Dec. 17.—(By Associated Press.)—The submarine tender Wandank, which is on the position where the S-4 was sunk, Saturday, in collision with the coast guard destroyer Paulding, endeavored to communicate with the crew of the sunken vessel, late Saturday night, by sounding devices, but obtained no response.

Provincetown, Mass., Dec. 17.—(By Associated Press.)—The fate of thirty-eight officers and men, the crew of the U. S. S. submarine S-4, was in doubt Saturday night as the vessel lay on the ocean floor in deep water off this port, after a collision with the coast guard destroyer Paulding.

Whether the hull of the submarine was crushed and her crew all drowned, or whether the crash had merely disabled her machinery and made it impossible for her to come to the surface, still was unknown.

Those who witnessed the collision feared, however, that a major marine disaster had resulted, comparable to the loss of the submarine S-51 in September, 1925. When that vessel was sunk in collision with the steamship City of Rome, off Block Island, thirty-three officers and men perished.

Submarine Emerged Dead in Line Of Fast Speeding Destroyer.

Sensational Make-up

Sometimes called "circus type. Front page a mosaic of squares and oblongs violently contrasting with each other. Papers of this type are likely to indulge in red ink. A difficult make-up to deal with on a dull day without anti-climax.

editors feel an opportunity for service as well as an economic mandate that leads them to edit papers in such a way that they will be read by a wide public. In typography, as well as in the other aspects of the paper, the result is a compromise. In some countries, especially where a large metropolis is centrally located in a comparatively small country, class newspapers flourish, but in America, generally speaking, each paper must aim, for the present at least, to attract as nearly as possible the whole body of readers, drawn from all the classes, existing within a given geographic area.

TYPICAL AMERICAN MAKE-UP. Out of this necessary compromise between emphasis and balance has grown what may fairly be called the typical American make-up. Greatly as newspapers differ among themselves, the typical make-up can still be detected and described in somewhat general terms. It is American because no other nation has independently developed anything just like it, or even successfully imitated it. Rules for its achievement can be stated with the important reservation that almost every newspaper departs from these general rules deliberately in some respect or other.

In the first place, it is the general rule on American papers that the front page is outside of, and above, all departments. The best news, the most important, the most interesting, the most sudden and unexpected, the most exciting, the best written, is placed, or at least starts, on the front page. This applies not only to the best single story the paper has to offer, but to the best eight or ten. It applies not only to the longer pieces but also to the short items and fillers: those selected for the front page should have a high degree of interest and a pretty general appeal, and should be, if possible, "spot news"—news that is unanticipated.

Like every other rule of human conduct, this principle can be carried to an absurd extreme. Some make-up editors, in their anxiety to get a great number of "good" heads on the front page, resort to an excessive and annoying number of carry-overs; they use too many jump lines, "Continued on page 17." It annoys the reader to compel him to keep turning pages and turning back. It also results in actually obscuring some of the good items on the front page: sometimes the reader, carried to an inside page by his interest in the first article that has caught his eye, goes on reading inside matter and forgets to turn back to the front page. For these reasons some well edited papers prohibit the use of more than an arbitrary maximum of carry-overs, for instance, three, except in unusual emergencies.

Corner Balance. There is no worse fallacy in the field of make-up than the desire one often finds in beginners to strive for what they call the "symmetrical balance." The ordinary American make-up is based upon corner balance—grouping the best items with reference on most papers to the upper right hand corner of the front page. Symmetrical balance is something quite different, and is employed sometimes on small country papers and often on the weekly practice sheets issued by students in high schools. It is usually from young newspaper men who received their initial training in such environments that the demand comes for the so-called symmetrical balance. The symmetrical balance, here strongly disapproved, is the arrangement according to which an article in the upper right-hand corner of the front page must be balanced by a similar story of the same length and with the same kind of a head in the upper left-hand corner, and every box, cut or article on the right-hand side of the page must be duplicated by a similar item of equal length and of the same typographic treatment on the left. The evils of this rule are that it results in selecting stories according to their length rather than according to their interest, and also that, in order to attain the desired appearance, the make-up man resorts to an excessive number of carry-overs with the consequences detailed in the preceding paragraph. To give effect to the symmetrical balance idea requires an excessive amount of "cutting the corpse to fit the coffin," and everything appears deader than is necessary.

Use of Corner Balance. The rule of corner balance assumes that the chosen upper corner of the front page (usually the right-hand corner) is the most conspicuous place in the paper and the fittest for the best that the paper has to offer. In an 8-column paper the best news goes into column 8. A single column cut or box, if used, will be placed at the top of column 7; if two columns wide at the top of columns 6 and 7; if three columns wide at the top of columns 5, 6, and 7, and so on. If the leading story is set two columns wide it will occupy columns 7 and 8. If a head wider than one column is used, column 8 will be one of the columns utilized. Wide heads over narrower stories, including banner heads—those stretching across the entire page—will be separated by cut-off rules from all matter with which they do not deal, but these rules will not extend between the head and either the story to which it applies or any cuts or boxes dealing with the same matter. Some newspapers, usually of the conservative type that use few banner heads, regard the upper left-hand corner as the most conspicuous; a few play their most important news nearer the center—but the increasing use of banner heads at the present time tends to emphasize the right-hand columns.

SECONDARY STORIES ON FIRST PAGE. The place second in importance on the first page is the upper left-hand corner. Here should be placed the story second in importance and interest. No attempt should be made to give it identical display with that in the upper right-hand corner if the latter is set in wide measure, in bigger type than usual, or is adorned with cuts. However, there is no objection to a symmetrical layout if it comes naturally, if the items of news and the pictures appear to run in pairs. The only objection to the symmetrical make-up as a steady practice is that nine times out of ten it is forced and is achieved at the expense of a reasonable and readable display of the news. Usually, when the right-hand story receives exceptional treatment, the ordinary normal head will be sufficient for the second story in importance. Especially is this true if the "alternate" make-up is used—if an attempt is made to keep column 2 "light." Under the alternate make-up system the top of column 2 will be devoted to some fine little item with a small head, or to some feature story headed in italics, to a one-column cut, or perhaps to some longer material which may be suitable for some reason or other to a head not set in large black headletter. In that case the story in column 1 will stand out with a good deal of conspicuousness.

The other columns can now be filled in with articles in decreasing order of importance, modified by the necessity of placing them somewhat in accordance with their length. The top of column 3 is usually the place of next importance. Column 4 should ordinarily be light, provided no cut or box extends from the right-hand side into column 5 and that that column can be heavy with a large head. It is sometimes necessary to place two heavy heads side by side, but an effort should be made not to bring two light column tops side by side. Cuts and boxes count as light. The other heavily headed articles can now be placed according to their fit, under the cuts and boxes, and on some papers even under the light stories that are used at the light column tops. The remaining spaces are filled in with the smaller articles that have been selected by the make-up editor as suitable front page material, the surplus being placed on an inside page.

MAKING-UP INSIDE PAGES. The inside pages come to the make-up floor with the advertisements already placed in them under the direction of the advertising manager. His arrangement of the advertisements cannot ordinarily be changed by the make-up editor without special permission, for the business office has often agreed with an advertiser as to just where his advertisements shall go. In an emergency the make-up editor sometimes "shifts an ad" to make the news fit in, but this is a dangerous practice, likely to result in recriminations and all sorts of trouble. Sometimes rather choice positions on the inside pages are sold to advertisers and this policy, where it exists, has to be respected by the make-up editor, but the ideal arrangement for the advertisements is to pyramid them from the lower right-hand corner of the page. This rule, followed in its purity on some of the best edited papers, may be expressed by the formula: no news under an ad and no news to the right of an ad.

The news, in its turn, is to be pyramided also, but about the diagonally opposite corner of the page—the upper left. Make-up proceeds as in the case of the front page, except the places of importance for news are now toward the left instead of toward the right. A certain amount of alternation of columns, heavy and light, is possible here also; in fact it is on the inside pages that the alternating system most fully justifies itself, because, while it is customary to jump articles from the front page to an inside page, it is not customary, except in the rarest emergencies, to jump them from one inside page to another. It is plain then that the editor who insists on a black top-head at the top of every column will be at a serious disadvantage in making-up inside pages when the occasional story appears that he cannot reduce to tabloid length. He will have no suitable and natural way of handling such stories, for on the inside pages often even the first (the longest) column on the page is shortened for news by the insertion of advertising matter at the bottom. It is better to accustom the reader's eye to a certain amount of alternation of light and dark columns. In such case an occasional long article can be found a place in the paper where its length will not be so conspicuous as to give the page a dead appearance.

PLACING OF CUTS AND BOXES. In the last twenty years there has been a decided tendency among make-up editors to abandon the former practice of "sinking" or "burying" cuts and boxes down in the stories, and to play them instead at the top of the page. Small boxes that are really part of the running story are still often sunk—as box scores and the like—and half-measure cuts (those less than a column in width) are uniformly played away from the top of the page, but most cuts and boxes now go to the top. The present writer had an interesting argument with a brilliant Paris newspaper man on this point. The French newspapers have retained the old custom of sinking the cuts. The Frenchman maintained that it was far more logical to place a cut down in the story, near the place where the subject was referred to in the text of the story; he furthermore preferred the appearance of the page which was dotted here and there with a variety of illustrations. It was pointed out to him that while this might be possible on the American front page which is free from advertising, most inside pages in this country are heavily loaded with advertisements pyramided from the lower right-hand corner (the French papers have inside pages with much more free space for news), and that it was virtually impossible to sink many cuts on the American inside pages and make the page look well. This is especially convincing when it is noticed that two restrictions on the placing of cuts have come into more or less general observance: first, that most cuts are not supposed to touch the side margins of the page, and, second, that there is a tendency to refrain from placing them in immediate contact with the advertisements. From these two facts, taken in conjunction with the limited triangular space available for news on an inside page, it results that the most convenient place for an inside cut is the top of column 2 for a single column picture, the top of columns 2 and 3 for a double column cut, and so on. This can be varied, of course, when the news space is ample.

RELATION OF CUTS TO STORY. When the cut is at the top of the page it is obvious that there are four possible positions for the related head and story: to the left of the cut, to the right of it, below it, and in a different part of the paper—of which the last may be ignored as undesirable. There is something to be said for each of the other three relationships; there is also a certain advantage in setting for the paper the style of adhering to some single one of them as preferable when other things are equal, because the readers soon acquire the habit of looking in a certain place for what they expect and experience a definite feeling of rightness and order in a customary arrangement. However, such rules hamper the make-up editor in the constantly changing exigencies of his work if they are too rigidly insisted upon.

BINDING THE CUT TO THE STORY. Besides placing the head and cut in close juxtaposition, and besides adopting a not too rigid convention as to their relative positions, there are other ways of binding the cut or box to the story. The most important of these is the adoption of the wide-measure head, running through several columns over both the article and the illustration. For such wide-measure heads the usual extra-condensed head-letter used in single column news heads is undesirable. It is better to adopt some good heavy italic or some attractive arrangement of caps and lower case in a normal or at least not greatly condensed letter. This should, preferably, be of the same family series as the type that is used over independent cuts and boxes. As to the wording of cut captions, considering the fact that they are to be played side by side with the head over the story, they should not contain a monotonous repetition of the same words. The news head and the cut caption are best written by the same copy-reader at the same time, to insure variety; when the news copy and the photograph are not available simultaneously, and one has been headed up before the other appears, the copy-reader should take the trouble to look up the former so as to avoid repetition of the same verbiage in the latter.

INDEPENDENT CUTS AND BOXES. Sometimes an excellent picture, unavailable at the time the main news story was printed, arrives a day or more later, while interest in the subject matter is still lively. Sometimes a picture or matter for boxing comes in which is worthy of printing for its own sake, and for which only a few words of explanation are necessary. It is increasingly the feeling among newspaper men, stimulated, perhaps, by the news reels, the rotogravure supplements, the tabloids, and the growth of facilities for illustration, that certain pictures *are* news—not merely illustrations to accompany news. Such matter is to be played independently. The practice is to make the caption over the cut tell the news much in the manner of the head over a story, and to put beneath the cut a very brief explanation. It should be noticed that the tendency of the day is to treat all cuts and boxes now as being at least semi-independent. The old way of displaying a portrait picture, for instance, with nothing but the individual's name under or over it, is not in accord with current practice in this country. A certain vivacity of expression, including the use of verbs if possible, is desirable in the caption above, and a few lines are inserted underneath even when the picture accompanies a story. It is desirable that these lines treat the picture from a slightly different angle from anything that appears in the text of the main article.

DEPARTMENTALIZATION. The extent to which the arrangement of news is deparmentalized varies on different papers. It is sufficiently obvious that such matters as market prices, routine marine news, women's club and society news, and sports are usually gathered together and given each a separate place in the paper, and that an effort is made to keep each department in approximately the same part of the paper day by day. Even the layman knows to about what page to turn for his favorite department.

Typographically, an attempt is quite regularly made to give some of these departments a special, characteristic appearance. The editorial page, for instance, is a well marked department. The conservative practice is to give this department a left-hand page about the middle of the paper and to keep it typographically light; to allow no advertisements on that page, or very few advertisements and only those that contain no very black or large type. If any news at all is permitted on this page, it is generally restricted to items headed with comparatively modest type. A more emphatic sort of paper uses the back page for editorials, and gives the whole page a very special typographic treatment indeed, utterly different from anything else in the paper.

An inspection of the most cursory sort of any random collection of newspapers will reveal similar tendencies to give special typographic treatment to church pages, often by the use of text type; to society pages, by an absence of heavy blacks both in the news and in the advertisements; to sports pages, by a profuse use of line cuts, as well as heavy italic and c. and l. c. heads; and similarly for other departments. In addition to the regular use of well marked departments, there is usually a more subtle departmentalization that manifests itself in many ways, different on different papers. For instance, the right-hand page opposite the editorial page is often set apart for special treatment, both as to the character of material preferred for that position and typographically. In fact, some of the most careful make-up editors try to treat every double page, the left-hand and right-hand pages together, as a single unit, and to give the pair of them a harmonious appearance as they lie open side by side. Typographically the news and the advertisements are to be considered together; if the schedule of news heads calls for very light type, no great amount of very large and heavy black type should be permitted in the advertisements; if much black type is used in the advertisements the news heads should not be too pale.

CARRY-OVERS INTO DEPARTMENTS. The make-up editor has to watch all department editors and to take from them any stories that ought to go on the front page. When a long story, of a specialized sort, is begun on the front page, the carry-over should be continued not on an inside page chosen at random, but on a page containing matter harmonious with it. The story of the convention of the Federation of Women's Clubs, begun on the front page, is not to be jumped to the sports page or markets but, if possible, to a page containing club or society news. Especially is this true when a picture is available that is worth printing but not worth space on the front page. The best location for this is alongside the carry-over. In such a case, most papers would continue the carry-over under a large head as explained in the next paragraph.

CARRY-OVER HEADS. On carry-overs ("Continued from page 1") two sorts of heads are available. One is a duplication or a close imitation in large type of the entire head that appeared upon the front page. These large heads are appropriate when the carry-over is taken to the *top* of an inside page. (If the copy-reader knows at the time he is writing the head that the story will be thus used he can save time and expense by marking his original head copy to be "cast double".) The other sort of carry-over head is the small head. This is an abbreviated head, reduced to one line or to a double break line, and is set in much smaller type than that used for the front page head: about 12-point, for instance, instead of 36-point. This head is used when the carry-over is short, when there are other top heads that will decorate the inside page better than the carry-over head would and the latter is not needed, or when space is very restricted. The wording of such a head should be as similar as practicable to that used on the front page. Whenever the copy-reader handles a story that is possible first page material and which is long enough to justify a carry-over, it is best for him to plan for a carry-over head of the one sort or the other at the same time that he writes the main head. It saves more than enough trouble to make up for the occasional times the carry-over head is not used; sometimes it is well to provide both kinds and let the make-up editor take his choice when he comes to make up the page.

ASSIGNMENT

Select a number of newspapers and criticize the make-up. In each case decide first what is the ideal of appearance aimed at: conservative, sensational, or compromise; corner balance or symmetrical balance; alternated columns or uniform columns; heavily illustrated or lightly illustrated; and judge how well each has attained its norm. Suggest improvements of arrangement, if possible. Suggest other type faces to be substituted in the equipment which you think would bring the paper closer to what you conceive its individual ideal of appearance to be. Examine each page for ineptitudes and errors and try to explain what was probably the exigency of the situation that led the make-up editor to compromise for the moment on an inferior technique.

VII

The Use of Type Forms

Personality Inherent in Type Forms. It is as make-up editor that the newspaper man first comes into contact with the necessity of making a serious study of type forms. It is his daily duty to make the utmost of the resources of the office in producing pages that will express to a nicety the desired personality for the paper. Knowledge of type will become even more imperative later, when he assumes the responsibility of managing editor and has a strong advisory voice, often the decisive voice, in the selection and purchase of new equipment. The selection of new type is difficult for several reasons. In the first place, every type design has subtle psychological qualities which even the untrained public unconsciously feels, but which only the person who is more or less an expert can forsee before trying it out in actual publication. In the founders' catalogues—the "specimen books"—the faces appear in a totally different environment, on a different paper, different size of page, and in different arrangements from those they must take in the newspaper. Selecting a type that looks strong and vigorous in the specimen book, one may find himself loaded up with an investment in forms that are crude, rough and too heavy to be easily legible when made up in the newspaper page. Or, seeking one that will be neat and restrained, he may find he has made his paper monotonous in appearance, weak, and sissified. Some types are splendid for other purposes, but out of place in a newspaper. And, with the change once made, the new types and matrices can scarcely be abandoned until they wear out.

Relationships Between Types. In the second place, the newspaper, in its news, in its heads, and in its advertisements, requires a considerable assortment of different sizes, widths, slopes, and faces, and different degrees of emphasis. There are many combinations that "go well" together, and many that "swear at" each other. Both harmony and contrast are needed, and yet it should be harmony without monotony and contrast without a hodge-podge effect. In connection with this is the fact that one seldom has the opportunity of selecting a complete new dress for the paper by buying all the fonts at once. In reforming the typography of a bad looking paper, it is usually possible to buy only a few fonts at a time, to replace some that have worn out. Suppose the body type and the advertising types are still good, but the headletter type is to be replaced. The new headletter should then harmonize if possible not only with the new body type and new advertising types one plans to get later, but for some months or even years it must run side by side with many of the old types, and should not look too badly in combination with them. It is not an easy problem.

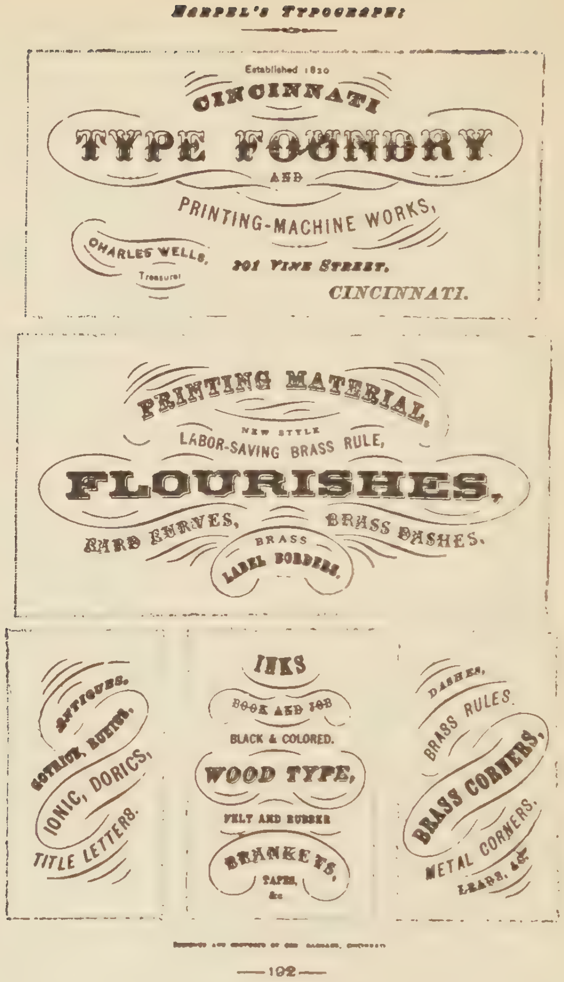
Good and Bad Types. The typographic art has but recently emerged from one of the worst periods in its entire four centuries of existence—the so-called "Victorian" period. Every student of printing should obtain if possible, for study, some specimen book issued in the last two decades of the nineteenth century, to get a vivid picture of just what it is that modern typography is trying to get away from. The point here is that, while the inferior forms are gradually disappearing from the late specimen books, there are still many types on the market which those best informed on the subject regard as obsolescent. It is necessary to be on guard against loading up with faces which will soon be regarded as old-fashioned, and as belonging to a bad old fashion, at that.

Economic Considerations. The best types are just as cheap, pound for pound, as those of inferior design, and far more effective in bringing credit to the office and the paper. The difficult problem of how to engineer a change has already been referred to. Choice is also restricted in other ways. In selecting a new font of matrices for the slug casting machine, it has already been explained that the so-called two-letter mats are extremely useful. But in selecting any style, one has to take into consideration the other style of type face which the manufacturer puts on the same font of matrices. One finds exactly the roman body-face desired. What then about the boldface letter which the supply house offers in combination? That will be used both in caps and in c. and l. c. for subheads and small heads. Presumably it harmonizes well with the body type, but will it harmonize with the larger headletters and the display types in the advertising? Perhaps it would be better to compromise on a second choice body type because it is combined with a better boldface. And all four lines should be good by themselves as well as in all possible combinations: the roman caps, the roman c. and l. c., the boldface caps, and the boldface c. and l. c. In hand-set type durability is a practical consideration: are there too many hair lines and kerns for the type to last well? Is the type manufactured in a large enough family so that one can expand the supply by adding different sizes, different degrees of condensation, etc., sure always that the new fonts will harmonize with the old? Is it too wide for narrow columns; is it wasteful of space—how many words of clearly legible print will go into an inch?

Difficulty of the Subject. In approaching the problem of creating a page that shall be pleasing to the eye, that shall attract and gratify the reader, that is capable of giving him an enduring feeling for the paper a little different from the emotion he may feel for any other publication, one is, in a small way, attacking the problem of the artist. *De gustibus non est disputandum:* it is difficult to argue convincingly in matters of taste, or to lay down rules that will automatically bring about desired emotional effects. In the nineteenth century the popular taste reveled, as a glance at the job printing of the period will show, in typographical effects that would now be avoided like poison by any good printer, and which cause even the layman to smile when he sees them. It was the aim of the printer in those days to fill his shop with as many and as varied sorts of type as he could, every font unrelated in style to every other. He reveled, too, in curved rules, in twisting hair lines, in flowers and flower pots, in trailing vines, in letters that were of erratic shape and surfaces that were broken, mottled, and speckled. Who shall say positively that this taste cannot return? In fact, some advertisers are even now experimenting timidly in reviving some few forms of Victorian types for the sake of their quaintness.

PRESENT-DAY TASTE. Nevertheless, the taste of the present day undoubtedly demands a certain simplicity and vigor which the Victorians did not attain. Every office is using, every foundry is offering, fewer styles and these more simple, bold, and plain, and more in accord with the traditions of the ages before Queen Victoria was born. It is no longer regarded as desirable to have in any single piece of printing a large miscellaneous mixture of different styles, or types with different traditions behind them. And the type founders are making it easier for the printer to achieve a dignified harmony of style by offering type in large, harmonious "series" or "families," each containing a large assortment of varying sizes, slopes, degrees of blackness or lightness and degrees of extension and condensation. Most printers today believe that it is better to have in the shop only six or eight good series, but with an adequate assortment of varieties within the series, than to have the limitless variety of our grandfathers. But, even so, many problems of harmony arise, for not even all the approved present-day series can be used in all combinations without violations of propriety. A study of type in general is necessary to educate the taste and the powers of observation and criticism.

"OLD STYLE" AND "MODERN." Ignoring for the moment the medieval text types, the scripts,



Harpel's Typograph;

Established 1820

CINCINNATI

TYPE FOUNDRY

AND

PRINTING-MACHINE WORKS,

CHARLES WELLS,
Treasurer

201 Vine Street,

CINCINNATI.

PRINTING MATERIAL,

NEW STYLE

LABOR-SAVING BRASS RULE,

FLOURISHES,

HARD CURVES,

BRASS DASHES.

BRASS

LABEL BORDERS,

ANTIQUES,

GOTHICS, RUNICS,

IONIC, DORICS,

TITLE LETTERS.

INKS

BOOK AND JOB

BLACK & COLORED.

WOOD TYPE,

FELT AND RUBBER

BLANKETS,

TAPES,

&c

DASHES,

BRASS RULES,

BRASS CORNERS,

METAL CORNERS,

LEADS, &c.

[illegible]

—192—

A Nineteenth Century Style of Typography

CARL J. HARVEY

Designer of Distinctive Catalogues, Booklets, Folders
and High-Grade Newspaper Advertising

FORTY-SIX CHASE STREET
NEW YORK CITY

PROGRAMME

ORPHEUS CLUB

November Eighth

◆

BARITONE
On the Road to Man

CONTRALTO
(*a*) *A Dream*
(*b*) *The Sunbeam*

SOPRANO AND TENOR
Duet from La Travi

BARITONE AND CONT

Tales of Hoffman

SOPRANO
(*a*) *Aria from Carmen* BIZET
(*b*) *Mad Scene, Lucia* DONIZETTI

TENOR
Barber of Seville ROSSINI

The
Classic Type Design

THAT HAS ATTAINED
GREAT POPULARITY AMONG
PRINTERS
AND ADVERTISERS

A TWENTIETH CENTURY STYLE OF TYPOGRAPHY

the sans-serifs or American gothics, and the freak types of various sorts, the usual work-a-day types of the present are divided into two grand classes, the so-called "old styles" and the "moderns." It would be going too far to say that these should never be used together, yet a miscellaneous mixture of the two is looked upon with suspicion. The distinction between old style and modern appears somewhat subtle at first, yet the eye, with training, soon becomes accustomed to it.

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
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WXYZ

The modern displays a machine finish; its outlines are smooth and accurate; its curves tend to be based upon the circle and its straight lines are obtrusively straight; it often has corners that are like a knife edge; it is characterized by verticals and horizontals both in its straight lines and in the lay of its curves; it usually has more contrast than the old style; that is, it is thicker where it is thick and tapers down to a narrower hair line where it is thin. It is a brilliant type, shining like a newly blackened shoe. Bodoni is the typical example but the modern illustrated above it called Scotch roman. (The upper is old style, lower modern.)

Old style, on the other hand, carries the flavor of the old hand-cut letters. Its curves are more sweeping, imitate the oval rather than the circle, and are more likely to be so placed that their ends are not in line either vertically or horizontally. Its edges are smooth enough but without the obvious machine finish effect of the modern. Its corners are not sharpened to anything like a cutting edge. It has less contrast. It gives a pleasing gray appearance as distinguished from the hard black brilliance of the modern. The original Caslons are old styles but many Caslon styles have been much modified. It is the tendency toward modification that makes it hard for the beginner to recognize the two styles at first. Typefounders have tried to produce intermediate forms that have the advantage of both in some degree. The body type of most newspapers is a modified modern, while old style has a large and perhaps increasing sway in display matter, book and magazine work, and general printing.

SERIFS. While the most obvious characteristics of type are matters of size and shape, the safest and most useful distinguishing marks are the serifs. Note that the serifs on the old style tend to be oblique or sloping and that their terminations are likely to be somewhat blunted. Note that the serifs on the modern are straight, horizontal, and tend to terminate in points of very regular formation.

If closely examined, the modern will be seen to utilize many more right angles than the old style. If the ability is once acquired of recognizing types by their characteristic serifs it becomes far easier to judge what fonts can artistically be used together than if one depends upon recognition of size and shape only.

LEGIBILITY. Fortunately for the working newspaper man who has to attain his results even though he may feel sure that he has no very acute artistic sensibility or sure eye for the principles of design, there are several points upon which the highest artistic authority and the most practical considerations are at one. First and foremost, the practical and the esthetic combine to endorse the proposition that good printing must be easily readable. It must be a transparent medium through which the thought of the writer comes to the mind of the reader with the least possible obstruction. If the beginner in typography will cling closely to this principle, he will come as close as one ever can in the field of esthetics to the certainty of having firm ground beneath his feet. However public taste may change, one can be reasonably sure that in the future as in the past, good printing will be readable printing. Fads and fashions may possibly resurrect even some of the quaint mannerisms of the Victorian age, but this much appears definite—the large body of nineteenth century printing that by reason of its eccentricities was hard to read will never be regarded as superior printing. Here are a few generalities regarding legibility that are at the basis of most present tendencies in printing:

1. The lower case romans are more legible than the upper case. The letters of the word "Typographic" bind together into a better optical unit than the capital letters in the word "TYPOGRAPHIC." The descenders and the ascenders of the lower case letters give the word as a whole a character of its own that is taken in by the eye as a unit with much less effort than the row of rather squarish capitals, lined up, as they are, both at top and bottom. The beginner might think that a whole paragraph set in capitals would stand out and be more legible than if set in caps and l. c. This is not the case. There is an increasing tendency, approved by the best typographers, to set wide heads, captions of various sorts, and display lines in advertising and general printing in caps and lower case. Some newspapers are now using this combination even in the single column heads, but the block letter (sans-serif or American gothic), ugly as it is, has certain advantages when it is desired to crowd twelve to sixteen large letters into a twelve or thirteen pica column.

2. The normal letter (with the "o" approximately round and the "M" approximately square)

is more legible than letters that are either extremely condensed or extremely expanded.

3. The old style, with its greater variety of curves and slopes, is more legible than the modern, with its machine finish, its tendency to line up too accurately, its disappearing hair lines, and its uniformity of verticals and horizontals.

4. The traditional romans, tracing back to Jenson and Caslon and tried out by the experience of centuries, are the most legible letters in existence, surpassing both the serif-less block letters and all freakish modern attempts to invent new sorts of serifs and letter forms.

5. Legibility involves a certain relationship between the size of the letter and the size of the space the printed matter is to occupy—the length of the line, in other words. A newspaper column, twelve picas wide, is more easily legible in 8-point or 9-point than it is in 12-point, but book pages, fifteen to twenty picas wide, are not easily read if set in less than 10- or 12-point. The same applies to two and three column advertisements and wider. It is a waste of good money to fill them with type that is too small, or for that matter, too large. Small type, however, can be advantageously employed in a large space if plenty of white margin is used and the individual lines are kept short.

6. Under the same principle, extra-condensed

letters are reasonably legible if the line in which they are set is short. This is the justification for the use of the condensed block capitals in one-column heads in the newspaper. It does not follow that a condensed block capital that is suitable enough when so used, can also be appropriately used for a head stretching across three columns. A visit to the exchange table and an inspection of the country papers, which are sometimes compelled to use type in this way by lack of other facilities, will demonstrate this to the eye. The same is true of lines set entirely in capitals: they are legible when not too long.

7. Scripts are not easily legible. Text letters are much less legible than romans, and in present-day practice are not used for long lines and paragraphs. They are extremely useful to give a certain atmosphere to the composition, but have to be skillfully combined with more legible faces. Text capitals are so extremely illegible that they are almost never used except as a single initial at a time.

8. In display, white space and ample margins are an element of legibility. It detracts from legibility to give any composition, either a separate advertisement, a piece of general printing, or a newspaper page, the effect of being too crowded. This was discussed from another angle in connection with the advisability of alternating heavy

and light columns in newspaper make-up. The heavy emphasis stands out better and is more easily read if surrounded by either lighter matter or white space.

9. Spacing has an important bearing on legibility. Where there is much leading between the lines there should be wider spacing between the words.

10. Typographic ornament and illustrations, if too large, too heavy, or too profuse, detract from the emphasis and legibility of the text. One of the faults of much of the bad printing of the Victorian period was that ornament was allowed to compete against the message of the text for the attention of the reader. To avoid this, ornament is either held down as to size and weight, or very much conventionalized.

11. In general printing, violent contrasts in the size of types used in the same composition detract from legibility. Extremely large and extremely small types do not go well together; gradations should be used.

ASSIGNMENT

Make a scrapbook collection of well set and poorly set advertisements and newspaper pages, marking the inferior examples with your suggestion of the type substitutions and other typographic changes which you think would improve the legibility and harmony of the composition.

VIII

Criteria of Good Printing

IMPORTANCE OF GOOD APPEARANCE. Legibility is not the only criterion of good printing. While principles of esthetics may not be largely discussed either in the editorial room or in the mechanical department in terms of high theory, still it becomes at once apparent to an observer that everyone, the owner of the plant, the editors and managing editors, the copy-readers on the news side and the copy-writers responsible for the advertisements, and the printers at the cases and on the floor, are all striving to match certain standards of superior *appearance* which they believe should characterize the printed page when completed. The make-up editor scans the first papers off the press for evidence that he has attained his ideals of balance and arrangement, or at least has approached them; the advertising manager examines the advertisements hoping that they have been so set that they will give pleasure to the eye of the advertiser and prove attractive to the reading public; the press room foreman is anxious to see that the ink is evenly distributed over clean type surfaces—that it is not black in one place and light in another, that the type has not been jabbed too deeply into the paper or impressed so lightly that surfaces that should appear black appear spotted, that the ink has not been so thick as to squeegee beyond the faces of the type nor so thin as to run or cause offsets. The printers wonder whether they have set various lines in the advertisements in the right size and style of type to meet the approval of their superiors; the manager speculates on whether he needs new and different type faces or a better quality of paper. All of this points to a certain anxious insistence upon *appearance* as such, and implies certain criteria of what good printing is.

TRAINING IN OBSERVATION AND TASTE. Anyone, no matter how unfamiliar with printing, obtains a certain impression of pleasure or displeasure upon observing a given printed page. But in the case of the layman this is largely unconscious; he may feel that something is wrong but he would be at a loss to say what it is or to suggest what to do to remedy it. It is like a man's observation of a woman's dress—the man cannot describe a single detail but he has nevertheless received a certain definite and powerful impression of charm or its opposite. It is the business of the professional to learn how, by the manipulation of details, to create a page that will attract and please the more unconscious and untechnical observers. The outside observer, it should be repeated, does not see or appreciate the details, but he is vastly impressed by their mass effect. The successful manipulation of these details in the office calls for the cultivation of the habit of observation and the training of the taste.

TECHNOLOGY COMES FIRST. Before all considerations of style and atmosphere, before all recondite knowledge of design and of historic periods, before all questions of appropriateness, even, important as they are, must come the simple considerations of good and honest *workmanship*. Without honest and careful workmanship the finest design, the most appropriate juxtaposition of well chosen ornament, the neatest use of correct proportion, appear merely factitious and flashy. Combined with poor workmanship they are really more obnoxious to the connoisseur—and, unconsciously, to the layman—than a simple, unsophisticated sincerity combined with good workmanship. To proceed, then, to the first set of tests: evidences of the use of good material and the application of careful technique.

INSPECTION FOR TECHNICAL CORRECTNESS. The first glance of the experienced critic, probably, takes in the way rules and borders have been handled rather than the type selection. The first fundamental is that the form shall have been correctly justified and locked. Inspection is first concentrated upon all corners: failure of horizontal and vertical rules to meet neatly at the corners of boxes and advertisements is the clearest indication of faulty justification. No amount of artistic skill can make a page look well when it is incorrectly justified. Next, the eye passes all around the edges of the page to see that everything is flush that should be flush, that neither rules nor type slugs project into the margins or fall short of reaching the margins and especially, in newspaper pages, to see that all columns are so justified that they come out even at the bottom of the page. In noticing the bottom lines of the various columns, it may be said that extremely short last lines, such as "ed." or "ing." spoil the evenness of the bottom of the page and that in careful composition extremely short lines cannot be approved even at the end of paragraphs in the body of the work. This is, however, perhaps too strict a rule to insist upon in ordinary hasty newspaper practice, but should be watched in book and pamphlet work. Furthermore, along these same lines it is a reflection upon the competency of the make-up editor if he too frequently allows subheads to remain unremoved within an inch or so of either the top or bottom of a column, or often lets a break between paragraphs come just where an article breaks from one column to the next or within a line or two of that point. On papers that use the stereotyping process the edges of the page are also to be inspected to make sure that they have not been too closely shaved off in the stereotyping room. After this, the eye should rapidly take in all the instances in which rule has been used in the page to see that it has all been correctly placed, that it is all of the standard adopted style and thickness, and that none of it is upside down. All this, to an experienced executive, takes only a second or two; in fact, it is an almost unconscious operation. After rules, dashes. A glance verifies the use of jim dashes, end dashes, and the others that may be called for by the style of the paper.

WHITE SPACES. Harder to detect, at first, than ineptitudes in the use of rules, dashes, and type, are the details of the use of white space, ranging from the minute spaces between words to the larger masses between lines, both in the body of the text and in the display advertising, and in the margins. The eye of the beginner does not quickly "see" where two points too much of lead has been placed between two consecutive lines, or where a lead has been left out. This takes training. Even the spacing between words is important in fine printing, though not too much is to be made of it in newspaper practice. However, as the reader of this book expects to supervise a wider range of printing later, a few words will be devoted to it here.

SPACING WITHIN THE LINE. As the lines have to come out even at the end, and are not allowed to appear ragged as in a page written on the typewriter, the matter of spacing in printing involves several problems. Not all spaces between words can be of the same width, and then there is the question of how to divide the words at the end of the line. There are several possibilities that are usually considered to mark bad composition. One of these is the accidental juxtaposition of more than two or three hyphens one above another at the end of successive lines of composition. This is to be avoided, if possible. Another is the use of too great latitude in spacing between words: some lines with very wide spaces and others with extremely narrow. Still another is the accidental alignment of the spaces in different lines in such a manner that they create a more or less vertical white cleft running up and down the page between the words. These lines have been set badly by the compositor on purpose to show a cleft of this sort, which is called a "river." Rivers are to be avoided, but in hasty newspaper work they are not marked for correction by the proofreader unless they are unusually conspicuous.

DIVISION OF WORDS. There is no generally recognized complete system of rules for the division of words at the end of the line. One's daily reading brings to the eye examples of two main divergent systems and many variations. Books and magazines printed in the British Isles tend to divide by etymology (demo-cracy, know-ledge, auri-ferous, anti-podes) while the American rules usually advise dividing as closely as possible to the pronunciation (democ-racy, knowl-edge, aurif-erous, antip-odes or antipo-des). Very elaborate sets of rules for division have been worked out and published; the following is an attempt to condense the generally accepted points into a list that will not be too difficult to remember. Expert proof-readers and compositors carry in their heads much more complicated systems of rules and exceptions; the following covers the ground for the use of the newspaper or printshop executive.

Where authorities disagree, this list uses the style of the University of Chicago Press.[1] It should be remembered in applying the rules for division that it is often a case of making the best of a bad business: of choosing between an over-wide or over-narrow spacing on the one hand, and a bad division of the word, on the other, with the third possibility of resetting several lines to get a better division. In many cases the printer must exercise his judgment and taste in deciding which rule he will violate. This problem is especially acute in newspaper practice, where the columns are narrow, and where time is often so limited that much resetting, with its chances for new errors and the improbability of getting a second set of corrections made in time, is not likely to contribute to ultimate improvement. Like most newspaper rules, these rules have to be broken at times; even the best style books contain such qualifications as "good spacing, however, is paramount," and "this applies especially in wide measures (20 ems and more)."

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[1] The excellent "manual" of the University of Chicago Press is obtainable at bookstores.

Rules for Division:

1. Divide according to pronunciation. Let each fragment be separately pronounceable. Therefore, (a) such fragments as -able and -ible are not to be divided because the "e" is virtually silent and "bl" scarcely constitutes a pronounceable syllable. Also, (b) one-syllable words are not to be divided no matter how long they are. Even when the addition of "s" to a one-syllable word to make a plural (house, houses) gives it two syllables, it is best not to divide the plural.

2. Divide on vowel whenever practicable (separate, not sep-arate; particu-lar, not partic-ular; criti-cism, not crit-icism. Observe that words ending in -able and -ible (mentioned above) are

exceptions to this and observe, further, that rules 4 and 5 cite cases in which such division is *not* regarded as "practicable." (But rule 1 is not to be violated; divide pov-erty, not po-verty, on account of the pronunciation. Also see rule 8.)

3. The separate parts of the word should not be too short. The shortest fragment left on the line above should be two letters and a hyphen; the shortest fragment to go down to the second line should be three letters. (The latter half of this rule is too severe for insistent enforcement under newspaper conditions.) A five letter word is the shortest that can be pleasingly divided.

4. The letter "x" always stays up, "j" generally goes down. In the English "x" never begins a syllable; "j" seldom ends one. (But observe rule 1.)

5. Divide between double consonants (set-ting, knit-ting) and between other pairs of consonants when the syllable ends there as determined by the pronunciation (advan-tage, finan-cier, impor-tant, struc-ture). For exception see rule 8.

6. Soft "c" and soft "g" go down; this is a mere repetition of the rule of pronounceability, for if they are separated from the succeeding vowel that determines their softness they are likely to be pronounced hard. It is also in accordance with rule 2. (Pro-cess, not proc-ess.)

7. If practicable avoid dividing hyphenated

words in such a way as to give them two hyphens. Also avoid bringing together too many successive lines ending in hyphens.

8. When the original word ended in a double consonant, these two consonants in the derivative stay together on the line above (add, add-ing; pass, pass-ing) ; when the original word ended in a single consonant but this consonant is doubled in making the derivative, rule 5 applies (control, control-ling).

9. Whatever the other rules may say, do not end a line with a syllable that may suggest an idea not in accord with the real meaning of the word, or one which may appear slightly ridiculous (dog-matic, face-tious, Coo-lidge).

VARIATIONS. The *Atlantic Monthly*, one of the best edited magazines in the country, has set forth its style rules in an admirable manual entitled *Text, Type, and Style*. The *Atlantic* labors under some of the difficulties of the newspaper, in that it uses narrow columns. In its manual the *Atlantic* discusses the principles enumerated and also points out some modifications it feels impelled to admit in its magazine, and even (but with much more reluctance) in its books.

The *Atlantic* permits "-ed" to be carried down, even though this violates rule 3, and even when the "-ed" is a separate syllable only by etymology, not by pronunciation, thus violating rule 1. This, however, it to be avoided *if possible,* and used only as an alternative to very bad spacing. But for the last line of a paragraph the *Atlantic* establishes a minimum of *four* letters.

The *Atlantic* lists certain instances in which various of the rules above *must* be observed *by compositors* but not necessarily by editors, authors, or proof-readers; records certain rules to be observed in books but not necessarily in the narrow-measure magazine; and cites instances in which it "is better" to observe the rule, some in which the interpretation of the rule is left "to the common sense of the compositor," and some in which the rule *must* be observed by all. In all this the *Atlantic* expresses honestly and frankly the real situation in practical operation: the rules constitute a genuine ideal of good typography, but their administration calls frequently for the making of a choice between various evils.

CRANKINESS NOT EFFICIENCY. The newspaper man is neither a proof-reader nor a printer; it is not his business to be continually correcting trivial matters of this sort, nor to pester the employees of the mechanical department on such small details. He should know the rules thoroughly, however, and be able to judge whether the mechanical department is giving him good service. If details are habitually handled too carelessly it may be necessary for him to take the matter up seriously with the higher authorities on the mechanical side and see whether improvements cannot be made in some way, perhaps even by a change of employes. Details may be trifles, but details build perfection and perfection is no trifle, either theoretically or practically.

HARMONIES OF FORM. An excellent assortment of type, workmanship that is technically good and careful of details, and good paper, ink, and presswork, are not enough, however, to constitute fine printing. Certain rules as to shape are well enough settled to be mentioned here. An inspection of any collection of printed matter will reveal the fact that printers everywhere agree that the square is not an appropriate shape for a unit of printing. The newspaper page, the book page, the magazine, the picture, the box, and the individual advertisement all show how the printer insists upon an oblong rather than a square. What is the ideal shape? Some say that the diagonal should be twice the width; a width of three inches and a depth of five inches gives a diagonal of six inches—twice the width.

This ratio of three to five should not be taken too seriously, but observation will prove that a shape that does not vary too greatly from this is pleasing to the eye. The newspaper page is wider than this; the newspaper story, on the average, is narrower. It may be noticed incidentally that the single letters of condensed type in single column heads assimilate themselves to the long and narrow shape of the story; while the page heads, the "banners," in more extended letters, harmonize with the squarer shape of the newspaper page. In fact, the generalization may be made that wide, shallow spaces take an extended letter, while, narrow, long spaces take a condensed letter with less disharmony. A three by five space looks well when filled with normal letters. Most newspaper men will agree that a story a column long needs to be broken up by sub-heads to look well; its disagreeable appearance is also modified by filling the next column with shorter stories.

Design Within the Unit. It is generally agreed that the blackest and heaviest part of a type design, that including the larger type, belongs at the top of the unit. The ideal is the *inverted* pyramid, never a pyramid resting upon its broad base. A type design is like a curtain hanging down from above, not like a pyramid of stone built up from below. The heavier part above and the lighter part below are thought to be best when "balanced" about a point called the "optical center." The ratio of approximately three to five here comes into play again; the lower part being the larger five-eighths but containing the lighter type. Some hold that the "golden ratio" of the Greeks is the ideal: the smaller unit is to the larger as the larger is to the whole. This brings one again approximately, but not exactly, to the three to five ratio. The practical application of this principle cannot be attained by mathematical measurement; taste and the artistic eye must dictate modifications. All that can be said with certainty is: a type unit, if divided into two parts should not be divided at the center or below the center, but well above that point; the weight expressed in a combination of small size and dense blackness above should be balanced by a combination of greater size and lesser blackness below; the farther away from the optical center the mass of the display above, the greater must be the combined area, weight, and distance of the type matter below.

HISTORICAL HARMONIES. In addition to good technique, good materials and good design, fine printing makes one other call upon the printer's knowledge and skill. There are certain proprieties that arise from the history and traditions of the art. There is such a thing as an anachronism in printing, a putting together of types and ornaments which may be harmonious according to mere design, but which historically and according to tradition do not belong together. This is a complicated matter, which cannot be discussed in this book, and the student will have to seek elsewhere for information.

ASSIGNMENT

Examine well printed specimens to detect the devices used by the printer to compromise where there is a conflict between the ideals of spacing, division of words, and location of the breaks between paragraphs with reference to the end of the page. Note which of these ideals is sacrificed in case of conflict. Examine various pieces of printing, noticing the relation between shape of the unit and shape of the type. Notice the arrangement of the light and heavy masses with reference to the optical center.

Managing Editor and Owner

IX

Equipment

Managing Editor's Ambition. By the time the make-up editor becomes an adept at solving the myriad production problems suggested for study in the foregoing section, he will be too valuable a man to be kept longer in a subordinate position. Granted that he has, in addition to his technical knowledge and skill, the requisite character, tact and managerial judgment, he is sure of a position as managing editor on his own paper or some other. Accepting such a position, what further promotion can he expect and work for? The time has now come for him to consider seriously the purchase of a paper of his own. The thoughts he should now think are owner's thoughts, not employe's, and he should learn to criticize equipment in terms of its cost price, its economical productivity, and its adaptation to making the paper pay.

There is little chance that, out of the savings from his salary, the managing editor can seriously hope to purchase so large a paper as the one on which he has been accustomed to work. He must therefore, if he expects to set up for himself, begin study of the problems of newspapers of smaller size. Such a study of the management of small newspapers, together with the criteria for judging the value of a given community as a prospective newspaper field, is too wide a subject for this small volume, which must restrict itself to dealing with printing and printing equipment. As reporter, copy-reader, and make-up editor, the newspaper man has already become more or less familiar with all the plant's printing equipment except the press.

The press is usually the biggest single item in the inventory. It is also the rock on which many a newspaper man's ambition has sunk. When a newspaper has the wrong sort of press for its field and its opportunities, it has a very serious ailment. The wrongly purchased press first bleeds the paper of its legitimate profits, and then blocks the way to reform by being so large and so expensive an item itself that it is hard for the impoverished publisher to finance a suitable replacement.

Nor, in the field of the smaller paper, can the problem of the press be easily settled by reference to printing the paper alone. It is often highly desirable to combine with newspaper publishing a department of commercial printing. In other words, the managing editor, as his next move upward, may desire to purchase a plant which contains not only a newspaper press but one or perhaps several smaller presses.

Classification of Presses. The presses in use today may be roughly enumerated as the hand-press, the jobber, the drum, the two-revolution flat-bed cylinder, the flat-bed web perfecting, and rotary perfecting. All are in use by newspapers, but the first two are adequate only for the very smallest weeklies. The drum and the two-revolution cylinder presses serve at a pinch for small dailies, while at the other end of the line the rotary is adapted only for a paper of large enough resources to support an expensive stereotyping department. A knowledge of presses is important to a newspaper man principally at the time of purchase. Many a paper has failed through having the wrong kind of press—either one too heavy in capital expense or operating charges for the size of the field or at the other extreme one inadequate to give the quality of service necessary to the paper's success. The writer has known newspaper men who have seized the opportunity to purchase a failing newspaper at a very small price, traded off the press and installed another, and carried the paper to a financial success. It is opportunity of just this sort that makes the journalistic profession one of such varying fates—sending this man to an old age of ill-paid drudgery, that one to comparatively easy success and wide influence.

Hand Press. In every large newspaper office are still found men who in their youth served at the handle of an old-fashioned hand press. This excellent device, now in use only in remote country districts for small newspapers and in photo-engravers' plants and elsewhere for proofing purposes, will serve to illustrate the three essential points that should be noticed and analyzed in the effort to understand any press. First, follow the paper through from the "feed" (its insertion into the press) to the "delivery" (its emergence). Second, follow the ink from its source, through its spreading and working, to its final application to the type and paper. Third, trace the power from its original point of application (the "drive") to its effect upon the various operations.

In the hand press the ink is spread and worked up on an ink plate or rollers not connected with the press, and is applied to the face of the type by a large hand brayer. While one workman is doing this, another is removing the printed sheet and inserting a blank sheet upon a large hinged flap ("tympan") which is turned down over the type surface as soon as the inking is completed. The power (other than that used by the ink boy in applying the brayer) is next applied by turning a crank which slides the type and paper in under the platen to receive the pressure, and then hand power is applied by pulling a lever which brings a large flat iron surface ("platen") evenly down upon the back of the tympan. The pressure is then released, the crank turned backward, the tympan raised, the printed sheet removed by hand, and the process repeated. This press can print only two small newspapers pages at a time, and cannot produce much in excess of 200 impressions an hour in the hands of average workmen. Without the assistance of an ink boy its capacity is less than this.

JOB PRESSES. Jobbers (or "platen presses") can scarcely be classified as newspaper presses. The printing surface they offer seldom runs beyond 15 x 18 inches (one small newspaper page) and it is only in an occasional poorly equipped shop of the smallest sort that any attempt is made to use one for the production of a small country weekly. The jobber is, however, an efficient modern press for commercial work, and its capacity is upwards of 1,000 impressions an hour. In all small newspaper shops it is a necessity, not for the production of the newspaper, but for the turning out of job, or commercial, printing which is a necessary department of the work of the small weekly newspaper plant, and therefore should be understood by all newspaper men ambitious to own their own papers but unlikely to be able to purchase dailies of large circulation. The action of the jobber will be described under the three headings previously mentioned for the study of all presses.

PAPER FEED ON JOBBER. The operation of the jobber consists in the opening and closing of two large jaws, one of which holds the inked form and the other the paper. The jaw upon which the paper rests is called the "platen." When the platen opens away from the form for the removal of the printed page it also tips to a more convenient angle for the operation. The surface of the platen is smooth iron; as this would be too hard a substance to be pressed against the paper and type, the platen is covered with an extra piece of very strong paper, firmly fixed in place, which is called "draw sheet." This with its "packing" constitutes the "tympan," a name suggesting the membrane stretched across the head of a drum. The packing or "inner tympan" consists of additional sheets of paper or similar substance placed between the platen and the draw sheet to soften the surface. To hold the paper in its correct place for printing, "gauge pins" are set into the tympan. Against these the paper is inserted by hand in the interval while the jaws are momentarily open. Of late years "automatic" appliances have been coming into use for inserting and removing the paper. Most of these lift the sheets by air suction. Sometimes these appliances are attached to the old jobbers, and sometimes built into the machine, constituting virtually a new sort of press. The same development is at present taking place among the cylinder presses, which will be mentioned later.

INK FEED ON JOBBER. The ink on the jobber is first placed in an "ink trough," which is part of the "ink fountain" attached at the extreme top of the machine. One side of this trough is a roller which revolves very slowly—a small part of a revolution every time the press "turns over." This roller thus gradually becomes inked all round. It is so arranged that once in each revolution it leaves a dab of ink on one of the rollers which pass up and down over the face of the form and over the circular disc at the top of the press called the "ink plate." Often the printer prefers to dispense with the ink trough on small jobs and simply place a few dabs of ink on the ink plate with a palette knife.

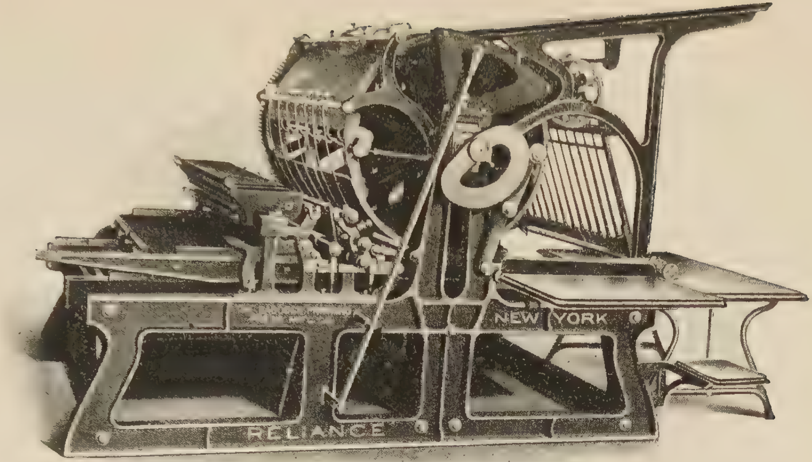
In any instance it is instructive to watch the jobber spread the dab of ink into a film, because this is an essential process on all presses and must be provided for. Nowhere else than on a jobber can it be studied so conveniently. Observe a single spot of ink on the cleaning plate. Now the press is started and a series of rollers pass up across the type form, across the ink plate and back across both again to the starting place. Each roller now has on it at least one spot of ink. Meanwhile the ink plate, touched by a ratchet on the machine, makes a partial revolution. The ink rollers now come up across the plate again, and not only receive another spot of ink, each of them in a new place, but leave new spots on the ink plate. As this goes on every one of the spots is doubled, quadrupled, and multiplied by sixteen, and in an extremely short time the ink is spread and worked into a fine, even film, which is transferred to the type with each revolution of the press.

Power in the Jobber. The job press can be operated either by foot power or by rotary power applied through a pulley or to the fly wheel at the left. The press will be understood if the transference of this power to the following operations is traced: the opening and closing of the jaws, the tilting of the platen, the movement of the ink rollers, the ratcheting of the ink plate and of the small roller in the ink fountain, and the closing down of the "grippers" or arms that come down against the paper on the platen to hold it in place and to help pull it away from the inky type.

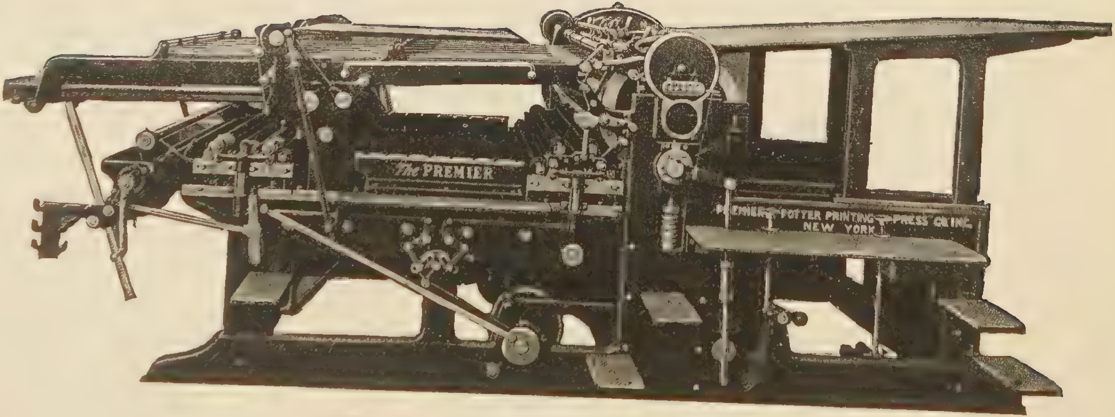
Drum Presses. Drum presses are one-revolution cylinder presses, but the expression "cylinder press" is generally restricted to the two-revolution type. In the drum press the type form lies on a bed plate or type bed, which, together with a large square ink plate, type high, passes back and forth under a cylinder. The drum cylinder serves as a platen—pressing the paper down against the type, just as the flat platen surfaces did in the hand and job presses. This also is covered with a draw sheet. The paper, one sheet at a time, is fed into the press and seized by the cylinder or drum at its highest point, and is gripped to the drum by small gripper fingers, and carried down and around. When at the lowest point of the drum, the paper comes into contact with the type, which is moving in the same direction as the circumference of the drum, at the same speed and in close contact with it. Having passed this point, and being now printed, the paper is separated from the drum and delivered.

The designer's problem was to get the press back into adjustment to repeat the operation. The type bed ends its motion, stops, and retraces its course. The drum, however, keeps on turning in the same direction as before. It is kept from grinding and scraping against the type which is returning in the opposite direction by having a smaller radius on one side than on the other. It may be stated in this way: during one half of the revolution the thick side of the drum is holding paper against the type; during the other half of the revolution the type is traveling back to its starting place and does not scrape against the drum because the drum, instead of being a perfect cylinder, has a smaller radius on that side and does not reach down to the type. This will be made more clear a moment later when drum and cylinder presses are compared.

PAPER AND INK FEED AND POWER ON DRUM PRESSES. The drum press should be examined to note that all the appliances treated in connection with hand and job presses are here also, performing the same functions and differing only in appearance. The platen's functions are now performed not by a flat plate, but by the surface of a cylinder; it, too, is covered with tympan paper and when necessary softened with packing. The gauge pins are replaced with gauges against which the press feeder places the sheets of paper. The grippers, in a smaller and crookeder form, are once more found holding the paper against the platen and pulling it away from the inky type after printing. The ink plate, oblong now instead of circular, is again receiving dabs of ink from the ink fountain, and spreading and working it into an even film under the influence of sets of ink rollers which finally pick it up and transfer it to the surface of the type. Only a few new principles



Drum Press



TWO-REVOLUTION CYLINDER PRESS

have been introduced: as the ink plate in its new shape cannot revolve, the ink rollers are made to oscillate a bit sideways as well as to roll straight forward, and a mechanical means has been found to replace the hand-assisted delivery of the jobber. The drum press is a small, useful affair for a minor country office. It represents a comparatively slight investment and consequent overhead and is simple to operate. It delivers 1,000 papers an hour without much trouble. The more popular press at present, however, is the two-revolution cylinder.

CYLINDER PRESSES. The justly popular two-revolution cylinder press is perhaps the most versatile and generally useful of printing presses. When we pass beyond this type we come to large presses that will print nothing but newspapers; the cylinder is equally useful for book work, pamphlets, folders, dodgers, and every sort of printing too large for the platen press. It will turn out rough work on cheap paper; it can also be keyed to the finest half-tone work in colors. Happy the publisher who has a high grade cylinder press and is in a position to work it to capacity, and who is not yet compelled to install one of the larger specialized newspaper presses.

CYLINDER VS. DRUM. The difference in principle between the cylinder and drum press is not great: the paper reaches only half-way around the big drum of the drum press while it reaches nearly all the way around the smaller cylinder of the cylinder press; in the drum the type bed returns to its original position ready for another printing while the large drum is making one revoultion; in the cylinder press the cylinder, only half as large as the drum, makes two revolutions, one printing and one idling, before the type bed gets back to the starting place. The drum avoids the returning type by being of slightly smaller radius on one side; the cylinder avoids it by rising slightly while it makes its second (idling) revolution, letting the type slip past without touching. In the drum press the paper is taken from the drum before one revolution is quite completed; in the cylinder press it follows the cylinder a little more than one complete revolution and is delivered at the opposite end of the press from the end at which it started—a plan which would be impossible on a drum. Otherwise the differences are principally matters of construction—the manufacturers have chosen to develop the two-revolution press far beyond the one-revolution type. It is made in more styles, including some that are sturdier, larger, more finely adjusted, heavier, and, incidentally, more expensive than any drum presses on the market.

MOTION OF BED OF PRESS. One interesting mechanical problem has to be solved in some way or other in every drum or cylinder press. As the cylinder revolves at a uniform speed, the type bed which comes in contact with it must also move at an even speed. It cannot start slowly, gather momentum, and then gradually slow down; it must start at full speed and keep that up to the end of its course. An ordinary piston attachment would not give this result. Different devices are employed by different manufacturers, some use elliptical gears, some split gears, and some a movable gear attached to its shaft by a universal joint. In examining any press it is worth while to understand how this peculiar running start and even motion is attained. As the bed, with its load of type, is very heavy, it develops considerable momentum. For the sudden stop at the end of its course it often runs up against an air cushion—an open air-compartment into which a piston attached to the moving bed is plunged.

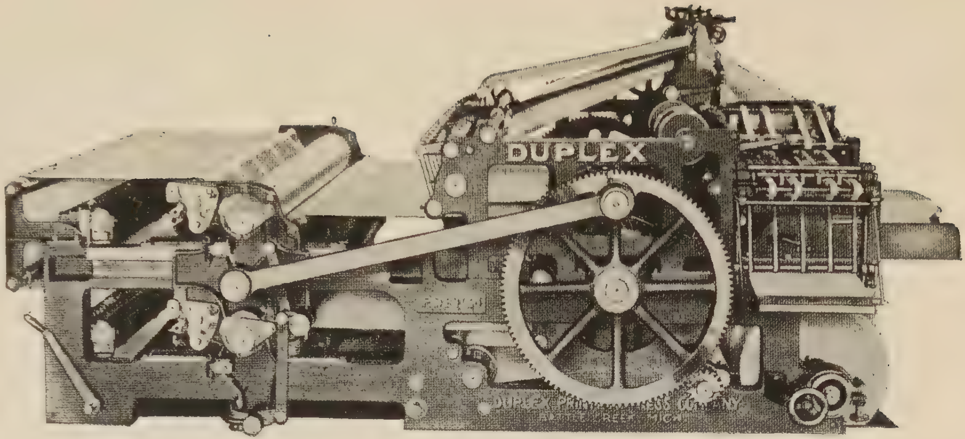
TRANSITION TO LARGER SHOP. The cylinder press can make 1,000 to 3,000 impressions an hour, 1,800 being efficient speed for large sheets of paper such as a newspaper uses. A large cylinder will print four newspaper pages at a time, 1,800 four page papers or 900 eight page papers an hour. When pressure of advertising and news begins to demand daily papers of six and eight pages and larger, and when circulation climbs beyond two thousand or so, it is obvious that only the most vigilant and foresighted management will get all the papers printed on time and provide all the space desirable for the paper's legitimate needs. The next step is to purchase a special newspaper press; to introduce a piece of equipment that can no longer be used for commercial work in its spare time, that is a charge against the newspaper exclusively, and that represents an investment twice or three times as much as a cylinder press. This is often a critical point in a newspaper man's career. A clear understanding of the entire situation is necessary that he may decide wisely.

WEB PERFECTING FLAT-BED PRESS. A web press is one that does not use flat sheets of paper, but whose paper comes in a continuous roll or web. A perfecting press is one that takes in the paper automatically and prints it on both sides before delivering it. Neither the hand-press, the platen, the drum nor the cylinder press is perfecting, nor is any of them a web press. The rotary presses, still to be described as characteristic of the largest papers, are web perfecting presses, but they are not flat-bed presses. The web perfecting flat-bed press is the next step for the newspaper that has outgrown the cylinder press. These presses come in various forms but one noticeable feature is that the paper is fed into the press at an even speed from the web, and it comes out also at a continuous even speed, yet, somewhere within the press between the feed and the delivery, the paper stops long enough to be printed from stationary type. This apparent contradiction is achieved by a device for taking up slack and letting it out again. This apparatus for taking in and giving out slack operates between the feed and the place of printing and again between the place of printing and the delivery. A close examination of this process goes far to explain the whole press. It is accomplished by moving rollers which rise and fall in rhythm, taking in and paying out the slack by lengthening and shortening the "detour" around which the paper has to pass.

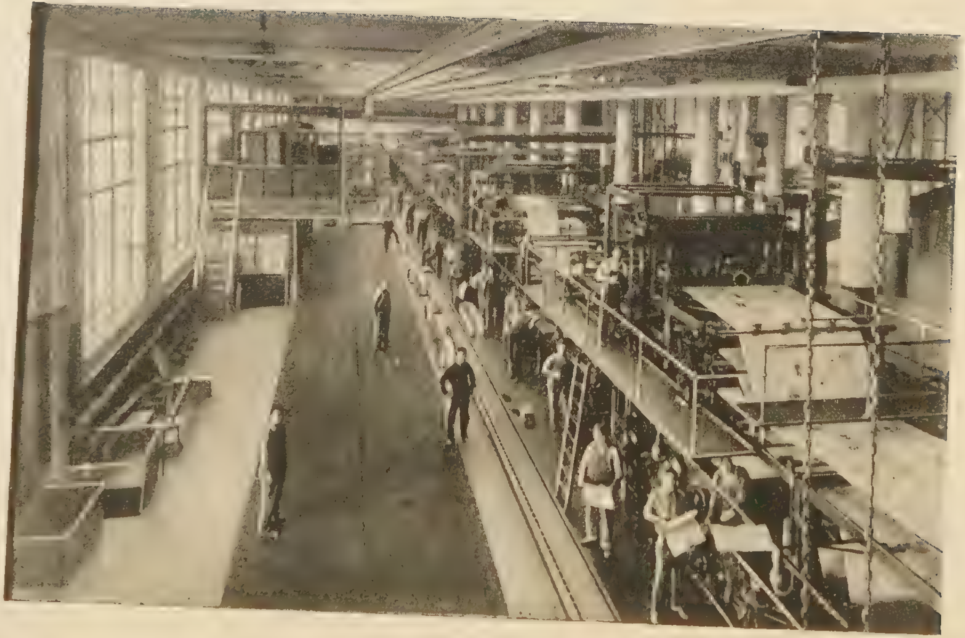
THE FOLDING MACHINE. On presses where the paper is fed in from a web, complications would obviously ensue if it were allowed to issue again from the press in that form—a long undivided ribbon of paper. It naturally follows that an integral part of any web press must be a folding machine which cuts and folds the papers and delivers them ready for the carriers and the mails. For the cutting process two kinds of knives may be observed: circular knives (each revolving on its own knife-roller) which cut the paper the long way of the web between the sets of pages and straight knives (each on its own knife-roller but mounted parallel to the axis of the roller) which cut the paper across the web, separating the parts of each complete paper from the one following.

As to folding, the long fold parallel with the length of the web is made by passing the paper over angled guides and sending it folded between further pressure rollers without interrupting its forward motion; the folds across the length of the web are made after the separate papers are cut from the web. In the latter case the separate papers are jammed against pairs of pressure rollers which grip them and carry them off at right angles to their former path. A simple counting machine is usually made part of the folding machine, and sometimes there is an appliance that sets slightly askew every fiftieth or hundredth paper to facilitate the making up of bundles of given content. Folders are sometimes attached to drum or cylinder presses; but usually where such presses are used the papers are either folded by hand, or fed by hand into a separate folding machine.

TRANSITION FROM FLAT-BED TO ROTARY. When a daily paper passes beyond a certain circulation the web perfecting flat-bed press is no longer satisfactory. The dividing line is somewhere around 4,000 to 6,000 circulation for morning papers and less than that for evening papers. Under the necessity of accepting news and advertising as late as possible, and sending out the papers as early as possible, more speed is demanded. The next step, however, is an expensive one. It requires not only a larger and usually much more expensive press,



Web Perfecting Flat-bed Press



PRESSROOM OF A LARGE DAILY PAPER

Series of Rotary Perfecting Presses

but necessitates also the addition of an entire new department to the shop—the stereotyping department—with separate equipment and supplies and a separate payroll of more or less skilled specialists. Yet the time comes, as the paper grows, when it is cheaper to assume these large new expenses rather than lose money because of inability to accept additional advertising, because of failure to send out the papers on time, because of having to close the forms so early as to miss the latest news, and because of the general trouble and exasperation that come from working with too small equipment.

THE ROTARY PRESS. The final form of newspaper press is the rotary web perfecting press. In appearance the most complicated, it is in reality the simplest of all the presses. Its principle is merely that of the washwringer. The typographic surface (a stereotyped duplicate of a type surface) is cast in cylindrical form and constitutes the surface of one roller. The opposing roller presses the paper against this. The rest of the press consists merely of devices for inking the typographic rollers, for applying the power, and for guiding and folding the paper; all of which have been studied on other presses and can be observed in only slightly modified form here.

It should be noted, however, that presses of the rotary type are built in series; that is, that several simple presses are combined into one "multiple" press. These multiple presses are known by the number of their units—quadruple, sextuple, or octuple as the case may be in accord with whether they contain four, six or eight unit presses. However many may be the number of presses built into one, it is necessary for the paper from the webs to be so threaded through the various units that all parts of the newspaper will come together at the end and be folded together into a single piece ready for the carrier boys and the mails. In order to thread the paper past some units and through others, it is sent over and under and around certain rollers that serve no other purpose than to guide it to its destination. These are called guide rollers. A good exercise in the study of the working of the rotary press is the attempt (which should not be at all difficult) to identify each roller by its function, either as a guide roller or as a typographic roller, a pressure roller, a knife roller, or an ink roller. The press becomes simple and easy to understand as soon as the observer detects the fact that it is divided into separate units, each with its separate ink feed.

THREADING THE PRESS. When pages are to contain matter in colors, each color necessitates a separate printing. On a small press when one color is finished, the press is washed and is reinked with the second color, the form is changed, and the whose process is repeated. On the rotary press it would not be practicable to send the entire web through for one color with the idea of repeating the process for the next color. The much simpler device is used, in such work as comic supplements for instance, of putting the different color plates and their appropriate colored inks upon successive units of the press and running the web through the different units *seriatim*. As in all color work, it is necessary to see that the successive colors fall in exactly the right place. This is called "register." Apart from color work, the threading of the press will vary in accord with the number of pages to be printed. Some of the units will be used for only a half, or a quarter, of their width, narrower webs being kept in store for this purpose.

ASSIGNMENT

Inspect, in operation, the different kinds of presses available within easy reach of your home. Trace through the press, in each case: (a) the paper, from feed to delivery: what carries it along and what guides it? (b) the ink; where is it fed in, what are the devices to ensure even distribution, how is it carried to the paper? (c) the power; where is the "drive"—its point of entrance into the press, how is it carried forward from this point, what are the different motions it causes?

Also ask about the press's capability of adjustment to different sizes of jobs, how it can be adapted to paper of larger and smaller sizes, what is its output in an hour in connection with different sizes.

X

Printing Plates

Varied Printing Surfaces. Not all printing is done from the face of movable type. Even before typographic printing was invented wooden blocks were used for printing surfaces. A great many such surfaces are in use today. Some are like type in that the ink is placed on a raised surface, the background, the part where the paper is to be left white, being cut away. All these are called relief printing. In others the ink lies in incised hollows, the raised surface is wiped clean and the paper laid on top to be inked where it touches the ink-filled hollows. This is called intaglio printing. In still others certain chemical principles are called into play which make it possible for the ink to lie on a surface which is on the same level as the un-inked surface. This is called surface printing. In the following list those which can be used by newspapers are marked "(N)," those which are used largely for art purposes are marked "(A)," and those which are adapted to commercial printing are marked "(C)." It should be noted that only the processes in the first class, relief printing, can be carried on with the presses heretofore described. The others need special presses.

Relief Printing.
  Woodcuts. (ACN)
  Type (NC)
  Linotype slugs (NC)
  Stereotype plates (NC)
  Electrotypes (NC)
  Chalk plates (NC)
  Photo-engravings (NC)
  Half-tones (NC)
  Line engravings,—"etchings" (NCA)

Intaglio Printing.
  Copperplate engraving (C)
  Drypoint (A)
  Steel engraving (C)
  Etching (A) (Distinguished from the "etching" used in photo-engraving)
  Photogravure (CA)
  Rotogravure, rotary photogravure, colorgravure, (NC)

Surface Printing.
  Lithography (CA)
  Offset printing (NC)

Only those processes that have some bearing on newspaper work will be treated here. It is well, however, for anyone who has to do with printing processes to learn about the others, at least to the extent of being able to recognize them for purposes of distinction.

STEREOTYPING. It has been impossible to speak of newspaper presses without making occasional references to the stereotyping room and to stereotype plates. Stereotyping is a duplicating process —that is, it does not create a new printing surface, but merely gives a duplicate of another printing surface already existing, which could have been used itself for printing upon paper. The stereotype is a mere casting. The previously existing printing surface, be it a type form or a cut, is pressed into a soft surface to make a matrix, and molten metal, lead slightly stiffened with alloys, is poured against this "mat." The material for the mat is called a "flong." It is a layer of paper-like substance, so prepared chemically that it is soft until the type or cut is pressed into it and heat applied. Thereafter it "cooks" into a hard pasteboard against which hot metal can safely be poured.

The mat's greatest utility is that it can receive its impression from type and cuts in a flat bed, and can then be curved to produce a cylindrical casting which will fit on a rotary press. It is the process that makes the rotary press, with its greater speed, possible. It is also used for making flat plates: merely by not bending the mat but pouring the metal on it as it lies flat. As the mats are very light, they are admirably adapted for sending through the mails. Flat stereotyping is therefore largely used even in the smallest newspaper offices. The printer receives from a distance mats for illustrations he could not possibly make in his own shop with his limited equipment, and there "casts them up." The only equipment needed is a pot for heating the metal and a suitable casting table with adjustable guides for the metal and a hinged cover. The guides are placed on and around three sides of the mat, the cover is closed down upon the guides, the whole table top is tipped from its horizontal to a vertical position, and metal is poured against the mat. The flat stereotypes are then set in the galleys and in the pages along with the type.

IMPERFECTIONS TO WATCH FOR. The principal defect the make-up editor is likely to observe at times on a page printed from a stereotype is an irregular black splotch in an area that should be white. As the stereotype mat is thin, the weight of the molten metal is likely to bulge it in those larger spaces where it has not been thickened and strengthened by being pushed into ridges by the pressure of close-set type. In such places, then, the metal, having shoved the mat out of shape, will stand too high and come into contact with the ink rollers.

Even where this does not occur, the fact that the ink rollers are somewhat flexible gives them, where the white spaces are unusually large, an opportunity to touch the bottom, which is supposed to be too low to print, and the paper also has an opportunity to sag down and pick up this ink. It is the practice, therefore, for the stereotyper to go over the back of the mat, pasting pieces of cardboard on the back of it to hold up those portions where the larger white spaces are to be, so that decided hollows will there be cast into the plate. Where this has not been done a black spot appears on the printed page. This can be remedied by gouging out the metal with a hand chisel or revolving routing tool. Stereotype plates are also sometimes trimmed too close at the edge or left untrimmed. A search through the newspaper files will show that these mistakes are not very uncommon. The eye can soon be trained to watch for them.

ELECTROTYPING. This, also, is a duplicating process. The original printing surface, type or cuts, is pressed not into a papier-mâché flong, but into a wax slab (usually a mineral wax, ozokerite). The slab is dusted with a conductor of electricity, ground graphite, and hung in a solution of copper sulphate. A heavy current of electricity is passed into this solution through a large slab of copper. It deposits copper upon the graphite surfaced wax until a thin film is formed. This film is peeled off and backed up with lead (alloyed).

Beginners are inclined to call all cuts, and especially half-tones, "electros." It is easy to learn to distinguish. The half-tone is a comparatively thick plate of copper or zinc. The electro is a very thin film of copper backed up with a thick mass of lead. The electro is much heavier than the half-tone; a printer could tell the difference in the dark.

Electrotyping is a finer process than stereotyping. It is used for fine book work; stereotyping is not. Many advertising cuts furnished to newspapers are electros. There are fewer chances of defects in electros than in stereos, but here, too, there is sometimes a failure to build up the white spaces on the wax—which is done by dropping molten wax on the spot where the larger white spaces are to be, so as to keep the white spaces on the final cut low. When a blotch appears it can be chiseled away as on the stereo. Sometimes, too, the melted lead has not flowed evenly into all the letters and the copper film, being very thin and not backed up with lead at this spot, gives way on the press, leaving a white space where a letter should appear.

LINE ENGRAVINGS. "Line engravings," "etchings," "zinc etchings," "line cuts," "zinc cuts," "zincos," are all terms referring to a single very common type of cut. This is entirely distinct from the "etching" of the artist which hangs framed upon the wall. Nor do these terms cover the zinc half-tone which will be described later. The copy for the line engraving is a pen drawing, a piece of writing, a printed page, or even sometimes a pencil drawing if the pencil used was black enough. But the copy must contain *no grays;* every point on the line cut must either print black or be pure white. An effect of gray can be obtained, however, by placing black dots close together, either with the pen or by printing them in patterns from the inked surfaces that constitute the "Ben Day" process. The pattern can either be drawn (unusual) upon the smooth surface of a piece of zinc or (the usual process) transferred to it by photography in such a way that the design is composed of a substance which, when heated, will become an enamel *impervious to acid.* This plate is then immersed in, or subjected to, a spray of dilute nitric acid and the unprotected parts of the plate are eaten away. The plate is then trimmed and mounted type high, and is ready to go into galleys and the page.

DEFECTS TO WATCH FOR. To save acid, the larger white spaces on a zinc etching are frequently not etched away, but are protected from etching by a dab of protective substance applied by a brush just before the plate is subjected to the etching. These whites are left to be cut away mechanically ("routed") in the trimming process, which is cheaper. Sometimes the man at the routing machine forgets to cut them away, and a solid black mass of irregular form (not a vague "splotch" as in stereos) shows up where white should appear. Perhaps, also, by a converse misunderstanding he has routed through a line or black mass which really forms part of the design. When etchings are to be run on a flat-bed press they are tacked on to wood ("blocked" or "mounted") to make them type high. Here, too, a common defect appears, the round heads of the tacks showing as black circles. This applies also to electros. These defects are easily remedied, even after the cut is on the press.

HALF-TONES. Half-tones receive their name because they contain grays, "tones" that are intermediate between black and white. Almost any kind of copy that can be reproduced at all can be made into a half-tone, but for those sorts capable of being made into line engravings the latter is both better and cheaper. The characteristic half-tone copy is the photograph. The surface of the half-tone is composed entirely of dots. These are arranged in regular order and a uniform distance apart, but are of varying size. Where the dots are large, the gray is very dark, almost black. Where they are very small, the gray is very light, almost white.

In transferring the photographic copy to the metal by the use of photography, the operator sees that the light passes through a latticed screen placed within his camera close to his wet plate. This cuts it up into dots of varying size—breaks up all grays into black dots and white spaces. He can thereafter proceed as in the line engraving. No pure blacks appear in the half-tone unless they have been painted in on the metal by hand—covering the intervening whites with a "resist" paint so that they will not etch. No pure whites appear in the half-tone unless the dots have been scraped off or cut away in the trimming process. The half-tone is identified by these dots, regularly arranged, varying in size, covering the entire surface out to the border unless specifically cut away. Half-tone designs and line designs can be combined on the same zinc plate and etched together forming a single combination cut. Frequently the interior of a cut is in half-tone and the border in line.

MATERIAL AND SIZE OF SCREEN. For a newspaper using the stereotyping process a half-tone should have not more than 60 or 65 lines to the inch. Such half-tones are made on zinc. For a newspaper printing on a flat-bed press coarse screen half-tones can be used, but finer results will be obtained with cuts carrying from 85 to 120 lines per inch. These can be made from either zinc or copper, but zinc is better and cheaper below one hundred lines and copper better for cuts finer than that. For book work screens of 133 lines or 150 are generally utilized. These are of copper.

The reporter is often confronted by the question whether he should accept with his story a cut which may be offered him. It is not practicable to accept a book cut (150 lines) for a newspaper that prints on a rotary press from stereotyped plates. For a flat-bed press it is a question. If the cut is good, the press in good condition, the ink just right, and the pressman careful, excellent results are sometimes obtained. If the cut is very tempting and if it is not possible to have a coarser one made, it may pay to try it.

ACCEPTING OF COPY FOR CUTS. Pictures, in American journalism, are becoming more and more a matter of news. It behooves the newspaper man to know from what copy cuts can be made. The first mistake the reporter makes in this matter is usually to accept a blue print with the idea that it can be reproduced in the newspaper. The eye of the camera does not see colors quite as the human eye does. The colors of the spectrum, violet, indigo, blue, green, yellow, orange, red, are all good, strong colors to the human eye, but the camera does not see at all those at the long-wave end of the spectrum; it assimilates them with black. It sees too strongly those at the short-wave end; violet, indigo and blue are the same as white to the camera. Therefore, a blue print, composed of white lines against a blue background, has not enough distinction of color to be possible copy for the making of a cut. Nor is a design written in ordinary blue writing fluid on white paper permissible copy.

On the other hand, if the architect or builder is willing to lend to the reporter the "tracing" from which he made the blue print, its black lines on white paper constitute excellent copy of the same design. An important signature or other matter written in writing fluid can be traced over on semi-transparent writing paper in black ink and thus reproduced for the paper. A design drawn in red ink on white paper is also good copy, but green is impossible unless it contains a strong ingredient of a lively yellow. A design in black or brown on yellow paper is bad copy.

As to photographs, good contrast is desirable whenever it can be obtained; strong whites and blacks come out better in the somewhat rough processes of printing coarse screen cuts than do the artistic efforts of the photographers indulging soft focus effects and printing in soft browns on yellowish papers. But almost any good photograph is worth a try; the half-tone process with its penchant for grays makes something of colors which the line process would reject.

Rotogravure. Picture supplements are now often printed by the rotogravure process. The rotogravure can be distinguished from the half-tone by the fact that it must appear in a different section of the paper from typographic printing, and, in that section, reading matter and illustrations alike must all be in rotogravure. Rotogravure is an intaglio process. Degrees of gray are obtained by varying the thickness of the ink (varying the depth of the pits in which the ink lies), and not the size of the dot. The dots are all squares, separated by thin white lines, which, however, are usually so obscured that it is difficult to detect them even with a glass. The resulting surface is modulated almost like that of a photograph.

The number of the dots to the inch is greater than in even the book half-tone, and the rotogravure plate can be printed on a thinner and cheaper paper and run off more rapidly than would be possible for a half-tone of anything like that fineness. This is because the process is intaglio—the paper has a flat surface to lie on where the whites are to show and there is little chance of too deep an impression. If the reading matter on a rotogravure page is closely examined the serifs of the letters are likely to appear somewhat hazy. Rotogravure inks, also, run in sepias and gray-greens rather than black. In any intaglio process the ink, once applied, has to be wiped or scraped away from the surface and left only in the hollows. In rotogravure this is done by a shaving knife called the "doctor." A close examination of the page will often show little streaks either completely across the page or extending out here and there from the printed portions. If these are all in the same direction, parallel, it is fairly safe, along with the other criteria given, to identify the page as rotogravure. Rotogravure requires an expensive special plant. The regular newspaper presses cannot be used. The supplements may be printed in such a special plant owned by the newspaper and forming part of its own equipment, or they may be printed for it in a commercial plant devoted to this kind of work.

OFFSET PRINTING. Some few papers are printing special sections in offset, and some magazines utilize this process. Offset printing is coming to play a large part in commercial printing, but has not yet affected the newspaper world very greatly. An inspection of the book section of the New York *Times* shows what this produces. Offset is an adaptation of lithographic principles to quantity production. The principle of lithography is the chemical fact that grease and water will not mix. A finely surfaced, porous stone was originally used, the design being placed upon this in greasy ink and the rest of the surface wet. The printing is done by pressing the paper against this stone. The re-inking operation is interesting. A water roller wets the stone with every revolution and astonishes the observer by remaining unsoiled by the inky portion of the surface over which it passes. An ink roller also passes over the stone, and is still more amazing to watch. It leaves its reinforcing quota of new ink on the spots where the stone was already inked, but fails to soil the creamy whiteness of the wet portions of the stone. This process continues indefinitely as the press run proceeds.

But in the offset process this flat-bed operation (the stone forming the flat-bed) becomes a rotary process. For the flat stone is substituted a grained zinc or aluminum cylinder, which has the same capacity for holding both greasy ink and water as has the porous stone. However, the paper is not pressed directly against this zinc cylinder. The zinc cylinder prints upon another cylinder covered with a rubber blanket, and the web of paper passes between this rubber coated cylinder and a pressure cylinder, taking from the rubber cylinder each time it turns its duplicate of the original design. Offset printing may be recognized by the fineness of its cuts in proportion to the cheapness and roughness of the paper the process is able to utilize, and by a peculiar soft-focus effect, rather agreeable to the eye, which characterizes its type letters and which is quite distinct from the rigid outlines of typographic printing. When the press is not working at its best the serifs of the letters approach a fuzziness different from anything likely to result from typographic printing, and hair lines are likely to be missing in places.

ASSIGNMENT

Visit the shop and examine the different kinds of cuts used, learning to give each its correct name. Examine newspapers, magazines, and books, attempting to determine the process by which the illustrations were made. Cut out printed samples of half-tones of varying degrees of coarseness, line engravings, and cuts in which line engraving and half-tone principles are combined. Collect samples of rotogravure and offset printing and study them until able to detect their distinguishing marks.

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A NOTE ON THE TYPE IN WHICH THIS BOOK IS SET

The type in which this book has been set (on the Linotype) is based on the design of William Caslon (1692–1766) who, it is generally conceded, brought the old-style letter to its highest perfection. The type selected for this book is a modern adaptation rather than an exact copy of the original Caslon. The principal difference to be noted is a slight shortening of the ascending and descending letters to accommodate a larger face on a given body-size.

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